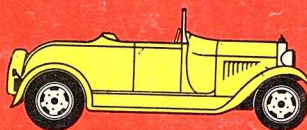


WHY CHROMING WEAKENS METAL

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STREET



MAY 1975  
VOLUME 4, NO.5

\$1.00



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### 1975 STREET ROD NATIONALS EAST

June 6-8

Maryland State Fairgrounds  
Timonium, Maryland (near Baltimore)

### 1975 STREET ROD NATIONALS SOUTH

May 9-11

Dixie Classic Fairgrounds  
Winston-Salem, North Carolina

### 1975 STREET MACHINE/VAN NATIONALS

June 26-29

Iowa State Fairgrounds  
Des Moines, Iowa

### 1975 STREET ROD NATIONALS

July 31-August 3

Mid-South Fairgrounds  
Memphis, Tennessee

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For complete information and entry forms, write or phone NSRA



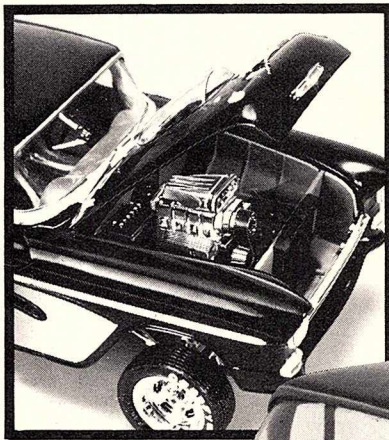
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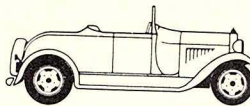
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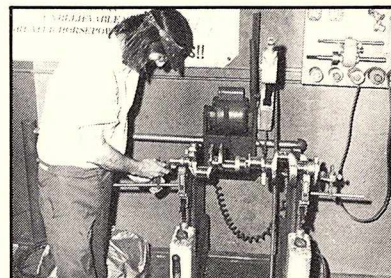
# STREET RODDER



MAY 1975 • VOLUME 4, NO. 5

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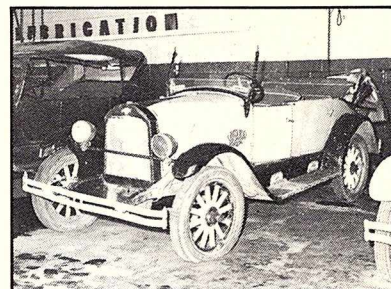
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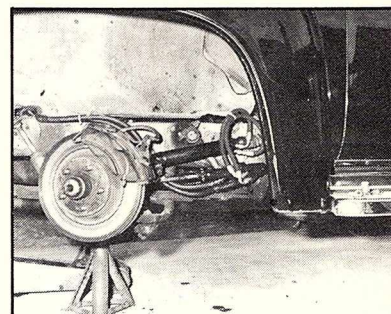
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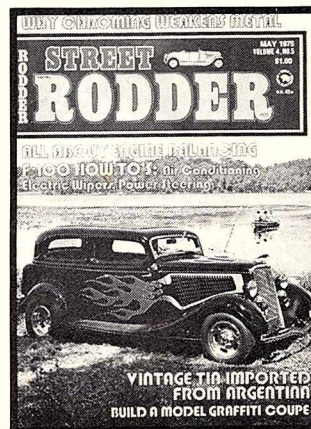
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## THIS MONTH'S COVER:

Jim Clark posed Tom Biles' super '34 sedan in front of one of Minnesota's 10,000 lakes during break from the Nats.



# MAY 9,10,11

(mothers' day  
weekend)

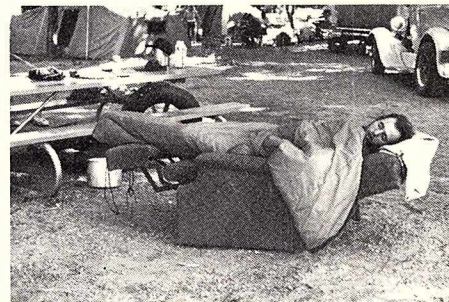
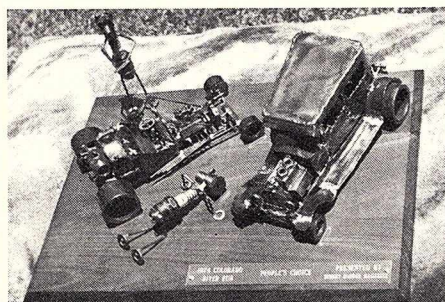


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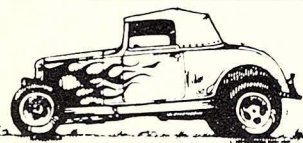


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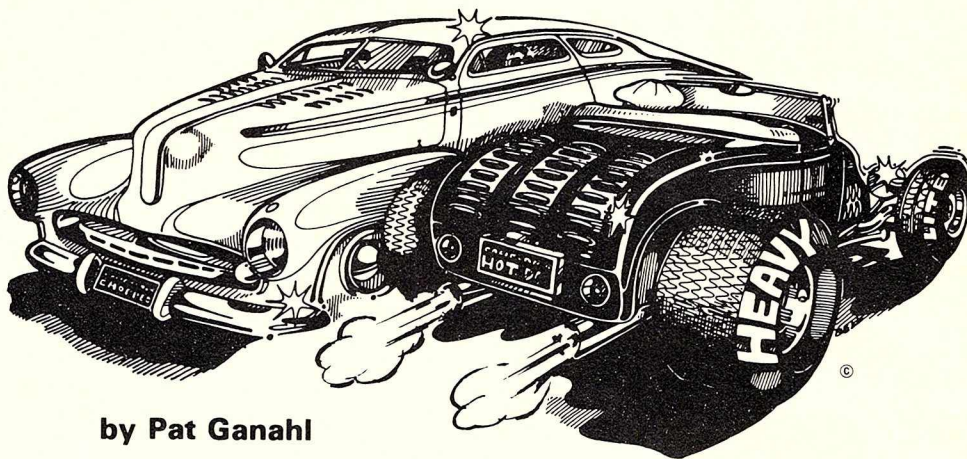
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## THE STREET CORNER



by Pat Ganahl

**W**e received a couple more letters last week asking why we feature "big bucks" rods in our magazine rather than everyday, simple, cheap rods — or even half-built cars. It is a question we hear fairly often; so here are some answers for those of you who feel you can't "relate" to rods which get their pictures on our color pages.

Right off the bat, I'll tell you that the majority of the cars we have been photographing lately are ones that we have met in a market parking lot, in the local neighborhood, on one of the nearby rod runs, etc. Many of them are strictly low-buck . . . but done nicely. In fact, we often have to "shoot around" hurts the car has received from daily use. And then you ought to hear others who have seen the car in person: "Hey, how in the world did that car get in the magazine? My car is a lot nicer than it is." We have to remind them that a street rod doesn't have to be perfect to appear in our pages; it just has to be neat, different, innovative, rare, traditional, or have some other noteworthy quality that makes it more than just another hot rod. But glittering chrome, super-trick paint, plush upholstery, thousands of horsepower, etc., it doesn't *have* to have.

On the other hand, we aren't going to black ball a rodder's car just because he has put some bucks into it. We certainly don't stand eagerly at the doors of the "super" rod shops waiting to photograph every trick machine that rolls out; however, you know as well as we do that the big shops (which charge the big bucks) have the facilities, the expertise, and the background to build some mighty fine machinery. Most of the big shops built their business by turning out super-quality work, and by engineering innovative yet practical components. The majority of our readers cannot af-

ford to pay experts to build their cars (neither can I). Very few of us own ten or twenty thousand dollar rods. But I think the majority of you will agree that you can admire the quality of craftsmanship in a well-built "big bucks" rod, and that you probably, at one time or another, incorporated some device or detail into a car that you were building because you saw it on a neat car that was featured in some magazine. Analogy: a kid who loves to play football watches the pros, not the sand-lot teams, in order to learn the latest moves and plays.

Most of us rodgers are the same way. We want to know what's happening in our sport, we like to pick up hints and how-to's from others who have tried new things, and rather than envying we emulate those who have the opportunity to build neater cars than we do.

I think the real reason behind most of the complaints, however, is the hidden wish (that every rodger has) that he might get a picture of *his* car in a magazine. I have to admit that I was really tickled when I saw a shot of my coupe in Hot Rod a few months ago (even though they called me Fred Rugsber#). We try to get as many photos of as many cars as possible into our events, runs, and show coverage. However, we do feel that feature cars should be in some way special, or at least indicative of some new trend, style, etc. They should be cars that will give other rodgers good ideas, they should be "models" for under-construction cars, or they should be the type to keep rodgers informed of what wild new things are happening in the street rod-ding world.

And, although we really regret that we cannot roam around the country choosing the cream of the street rod crop to

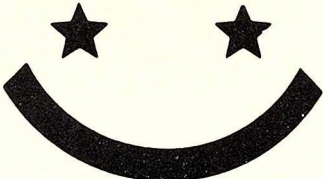


shoot photos of, we do not feel all that guilty about featuring quite a few local (So. Cal.) cars. If we shot features just to indulge street rodder's egos, that would be different. But since the feature pages are designed to display exemplary cars, as *cars*, then it actually matters little whether the photos were taken in Los Angeles or Bangor. We happen to be very lucky to have a great variety of excellent new rods constantly appearing in areas that are within our reach (that's probably why we're here, right?). If we were showing you the same few local cars over and over, that would be different — you couldn't learn much from that. But if you want to see something on '38 Fords, for instance, then I would presume you would be more interested in the Ford than where it is from. I would be naive not to admit, however, that ours is an ego-oriented sport. That's where the rod run and event coverage comes to play. Lots of pictures and lots of people's cars, from lots of places. Besides the fact that we actually do include quite a few out-of-state features . . . check this issue.

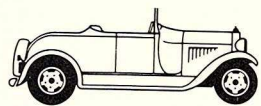
And then quite a few who write in say they would rather see feature photos of the cars in construction stages rather than in their completed finery. We realize that there are some benefits to the "garage scene" types of features; however, we feel that for every reader who digs this sort of thing, there is at least one other who wishes he could see how the finished car will look, too. So, as a better compromise, we have been taking pains to try to include with our "finished" features, several shots of the car as it was being constructed, so you can see just how it went together. Obviously, however, we can't possibly hang around everybody's garages while they are building their cars — we are lucky to get one or two that we have "followed" into each issue. If a car is already finished when we meet it, then we either try to get it up on a rack, put a jack under it, or just grovel on the ground, camera in hand, trying to get as many photos as possible of the mechanical details and noteworthy underpinnings. If there are noteworthy underpinnings. Yes, we too definitely believe that features should be more than just "pretty pictures."

Now, if you are still grumbling that the pages of *Street Rodder* are treating you unfairly because they haven't featured *your* pride and joy set of wheels, do like Roger Florey (see pp. 45-47) did. Send us some excellent photos of your interesting and well-built street rod, and we will put it into *Street Rodder* magazine . . . just to make you happy.





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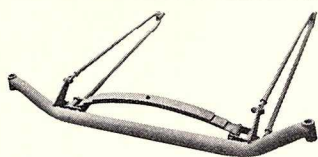
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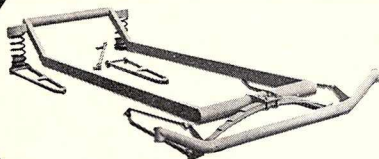


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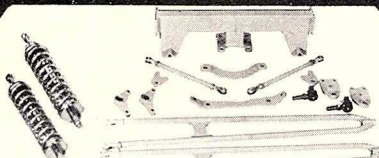
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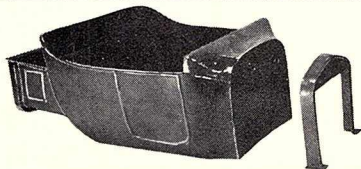
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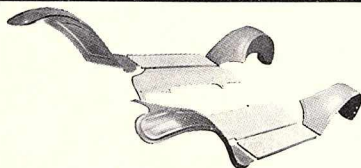
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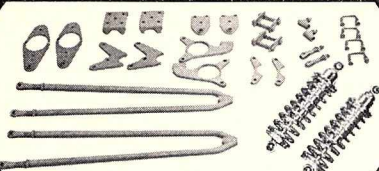
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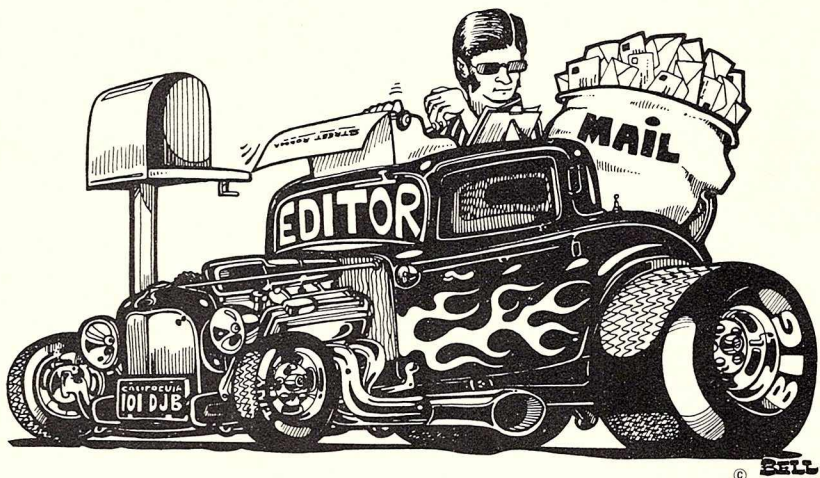
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## NOTES FROM NSRA

Congratulations, Pat, on your appointment to the editor's seat; I'm confident *Street Rodder* couldn't have made a better choice if dedication, determination, enthusiasm, and interest are among the ingredients necessary.

I have read with interest your February 1975 edition. You're probably tired of hearing compliments on the magazine and its content, but I congratulate you once again. Of particular interest is the article, "Mail Order Rip Off," since NSRA is frequently involved with helping street rodders who have been ripped off by a disreputable company.

I'd like to pass along further information on how to recover a loss such as this one, or at least hopefully arrive at a settlement of some kind. If a guy gets ripped off badly, he has not only the Post Office Department as a helper (in mail order frauds), but he can also address a complaint, with documents and a complete explanation to:

Office of Consumer Affairs  
South Building  
14th St. & Independence Ave. S.W.  
Washington, D.C. 20250

NSRA has used the office of Consumer Affairs (successfully) in efforts to help rodders who've had the misfortune of dealing with a "bad company." This office of government, if they feel a complaint is valid and justified, will act promptly in behalf of the consumer to get results. And of course NSRA members can get help and guidance in these matters from the NSRA Headquarters office. It's a service we've been performing for NSRA members for a couple of years now. We've saved a lot of

rodders a lot of headaches and dollars because of our service in this area.

Dick Wells  
President, NSRA

## MORE CHEVY CLUB INFO

In your December issue you ran a letter asking for Harvey Clark's address in Little Rock. We thought some of your readers might be interested in our Chevrolet Classics Club in the Omaha-Council Bluffs area. We would like to hear from anyone who might be interested in the 55-57 Chevrolet, whether it be an individual who might want to join, or a club which might want to form an affiliation.

Chevrolet Classics Club  
Jerry Dinsmore, V.P.  
215 N. Elm  
Logan, Iowa 51546

## RODS AND CUSTOMS

I have been reading *Street Rodder* for quite some time, because I am a street rodder. At present I have a 1934 Chevy 3-window sport coupe and a 1950 Chevy 2-door. I count my '34 as my street rod, and I am making a '50's custom out of the '50. So far my '34 has all chrome suspension and I hope to have the rest of the car finished by next summer. My '50 Chevy has had various modifications to it such as a 1949 Meteor grille, a rolled pan in the rear, and taillights out of a '66 Chev Impala. The upholstery is done in black tuck and roll. I retained the original engine and added some chrome in the engine room. A Hurst shifter mounts on the stock trans. I hope to show it in the Baltimore custom auto show here in February. I would like to



send you some pictures if you are interested.

James L. Dyson  
Towson, MD

*Ed's Note: Sure we're interested in seeing pictures of your cars, Jim. Dig up a copy of the Apr. '74 Street Rodder, and check out the Rodder Mail column to see what sort of photos to take. We have also noticed that more and more rodders are telling us about their "other" cars. A custom '50 Chevy, regardless of what you call it, sounds pretty neat to us.*

### WHAT'S A TRUE STREET ROD?

Being a dedicated reader of *Street Rodder* for the past year and a half, I have only one complaint. I very seldom see what I call a true street rod, such as the likes of 32, 33, and 34 coupes (fenderless), like the drawing by Bell on your Rodder Mail illustration. Hope there will be some of these types of rods later on. I appreciate the quality, articles, photos, drawings, and ads in your magazine. Keep up the good work.

John Fink

Kannapolis, North Carolina

*Here all these other people are arguing over whether anything made before or after 1948 is a true street rod or not, and you feel that only fenderless '32-'34 coupes fill the bill? Jack Stewart maintains that only a roadster can be a "true" rod... but then his car does have full fenders. I betcha if we took a vote, we'd get at least one vote for every car that was ever made... well, maybe not the '49 Nash.*

### STREET MACHINES

When in the future are you going to have an issue on just plain old street machines? Not ones with super modified engines or fancy paint jobs. Just nice looking cars.

Ron Barnes

Topeka, Kansas

*Why, we've had lots of nice looking cars in our magazine! Do you mean late-model stockers with mag wheels and wide tires? We could do an article on wheels and tires.*

### WELCOME BUD

The addition of Bud Bryan as a regular contributor is fantastic. He is a real professional. Excellent! Your magazine is really improving — more and deeper tech articles. You're number one!

Don Brown

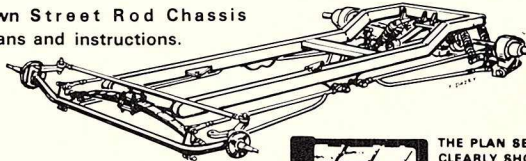
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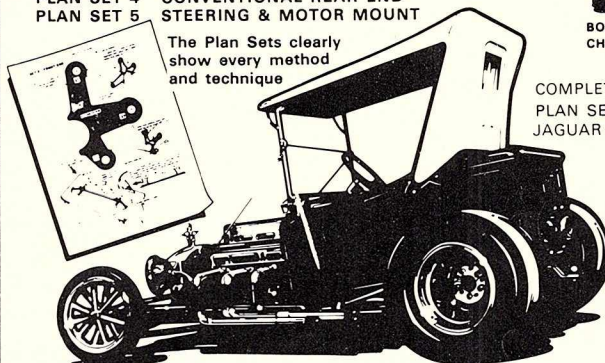
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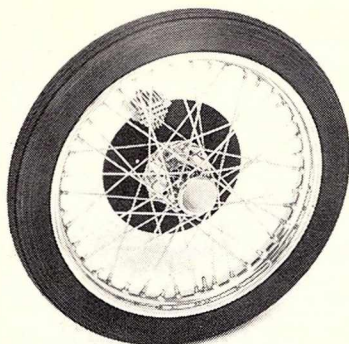
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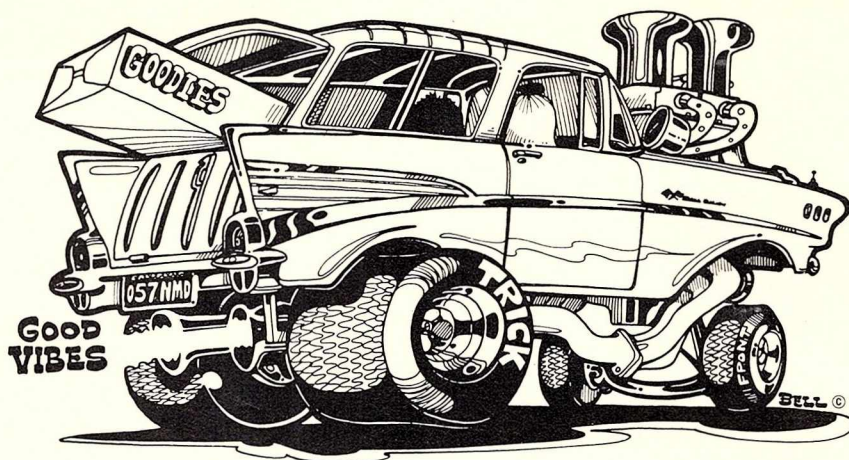
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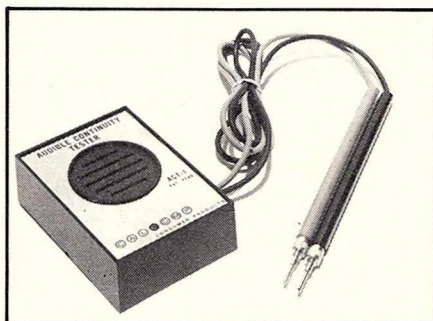


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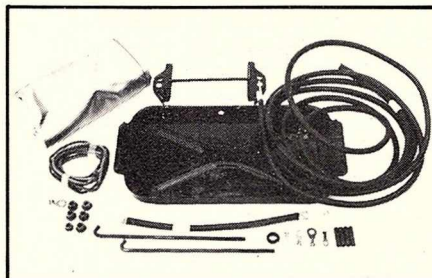
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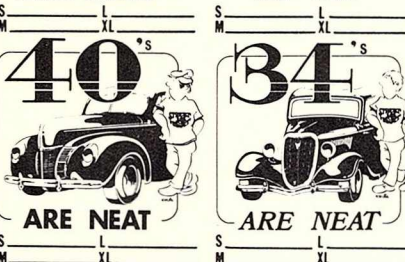
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(Continued on page 13)

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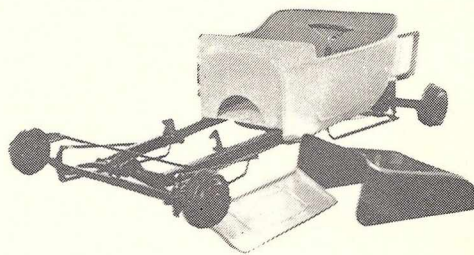
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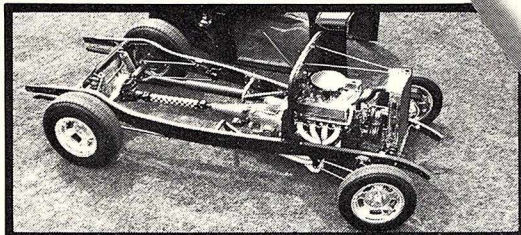
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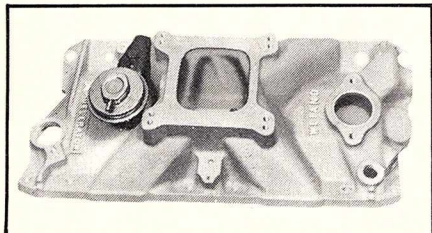
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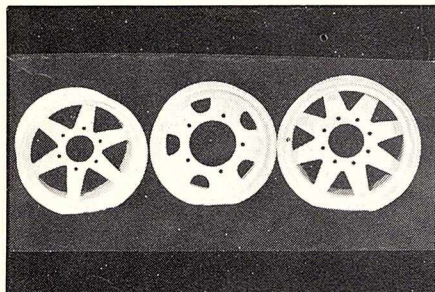
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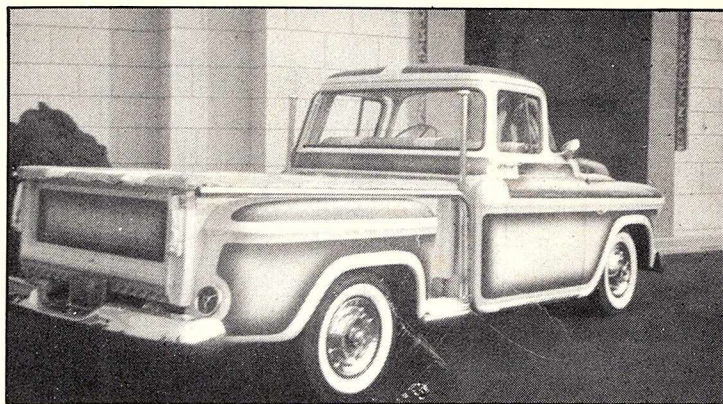
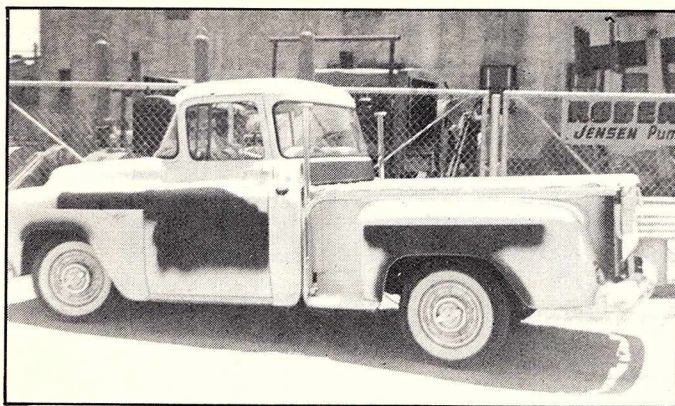
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# ONE STREET RODDER'S "AUTO" BIOGRAPHY

## PART II: SOUTHERN CALIFORNIA HOT RODDING

by Tom McMullen

**I**f you read and enjoyed part one last month of my peculiar and sometimes humorous car life, you may care to read Part II and follow my story to present.

You saw, at the close of last month, that my arriving and living in California was not the easiest. But the insurance payoff from the burned custom gave us a new start. We took the greater portion of the money and paid off the Chevy Pickup which I had bought from Dick Jackson. This gave me a step-side pickup for transportation. My wife and I decided it would be nice to have a custom so we took some of the money and put that toward customizing the truck. We had Dick do a super paint job on it in candy blue and white pearl panels. We drove it to Tijuana and had a wild, wild upholstery job done. Everything — under the hood, interior, floor, behind the seat, tarp, bed — everything. We chromed a lot of parts, added some outside exhausts, hub caps, and incidental accessories like spot lights.

I started out on Monday looking for a new job. Not too much luck. Later that week a fellow by the name of Maxfield came to see me to bid on the burnt car. I gave him a little background of my skills which were all automotive, welding, and cutting. I knew of the Hollander interchange parts manual, had worked in

*TOP and RIGHT—We left Tom last month with a newly acquired Chevy pickup. It didn't take long for the changes to start. The paint job was candy blue panels over pearl white. Lots of tuck-n-roll.*

wrecking yards, and so on. He informed me that he was just opening a new wrecking yard on Cherry Street, on Signal Hill. We made a deal that I would go to work and set up the wrecking yard for him. Then he would hire fellows to work under me and I could manage it. Sounded good.

I finally ended up buying the burnt custom for myself, dismantling it, selling the engine, trans, and junking the balance. I went to work at the wrecking yard where I bought a '49 Ford two door which came in with a flathead engine and four barrel carburetor. I used this for transportation while Joan drove the truck to work at the telephone company in Compton. I worked very hard at the wrecking yard, setting it up, towing in wrecks, dismantling vehicles, welding up pipe racks to hold doors, windows, etc. We got hand tire changing equipment and I worked for several days in the hot sun demounting tires. Hundreds upon hundreds of them. Stacking the rims and the tires separately, and so on. Then, when the day came for the grand opening, he hired the colored fellow from the wrecking yard next door, at a much cheaper wage, and let me go. My luck didn't seem to be holding very true.

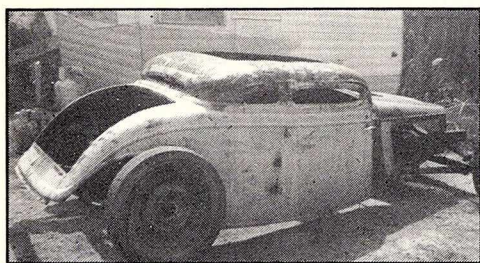
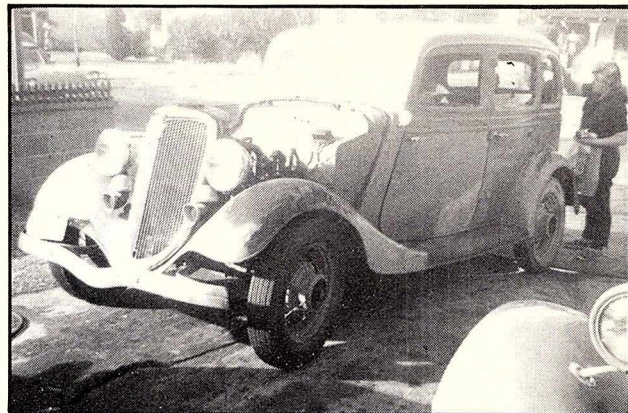
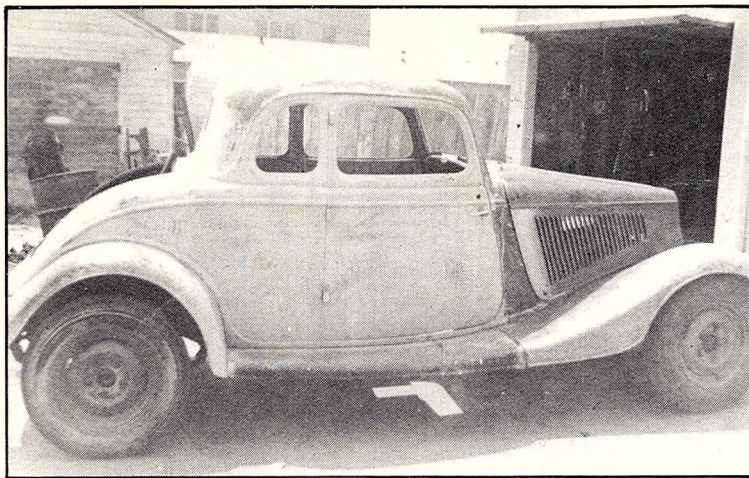
I looked for another job for a month or so and found nothing. I did find,



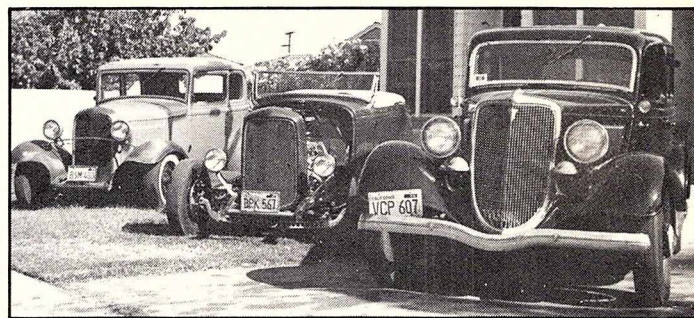
however, a really neat 1934 coupe, a five-window with no interior and engine. The people had it sitting next to their house for a couple of years. They gave it to me just to get it out of their yard. I towed it home and immediately started making a drag car. I chopped the top 10 inches, channeled the body over the frame, and removed the fenders and running boards. It was going to be a sweet little competition coupe. But with no money, no resources, and very few tools, the end was in sight. I ended up giving it to a club in Long Beach who could finish it. They made a beautiful little competition coupe out of the car.

I then decided to take my G.I. bill and go to college. I chose Compton J.C., where I was going to major in electronics, hopefully some day to be an electronics technician. During the balance of the summer, Joan worked at the telephone company and I picked up odd jobs as best I could while waiting for school to open. One day while talking to a friend in the alley behind the apartment, a garage door down the way opened and out backed a gorgeous little





*Tom got the '34 five window for free. Look at how straight it is. Then came the torch; it was going to be a drag coupe (lack of funds forced Tom to give it to a club). '34 sedan got better treatment. Received Olds engine, "gennie" look.*



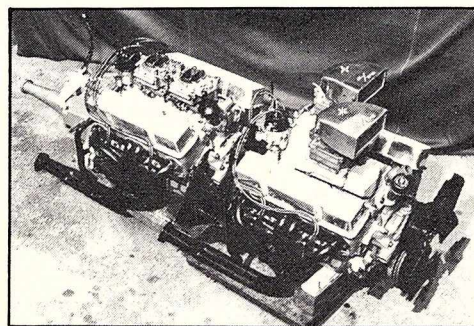
black, non-fendered, '32 Highboy roadster. In a puff of smoke and a big roar it was gone down the alley. I began seeing it on occasion, and met the owner, a truck driver from the next apartment. He liked my truck and I liked his roadster, so we began borrowing each other's vehicle. Soon we made a deal and I bought the roadster for \$600. I didn't have the money, of course, so I had to take out a loan against my truck.

Then I moved to Lynwood, which was only up the street about two or three miles. It was behind a body shop in a small apartment complex. About this time I saw a gorgeous little orange '32 Victoria, with a Chevy in it, running around. And the guy likewise saw my truck. He wanted the truck and I wanted the Vicky. I was tired of showing and taking care of a show car, so we made a trade; he gave me the Vicky and \$600 and took my truck demolishing it the next day. So now I was the proud owner of a '32 Victoria with a Chevy and a '32 Roadster with a Chevy. I used the \$600 to pay off the truck loan and I was scot free, with the two '32's. Joan drove the Vicky to work and I drove the Roadster. I had since got rid of the '49 Ford trading it for a '48 Sedan, which promptly blew up.

College started and I became very busy with school. At night I still wanted to work on the roadster. I met a fellow who had a small engine shop on Long Beach Blvd., at the edge of Lynwood, right next to Martinez Custom Upholstery. This fellow, Norm, and I built a '352" (half-inch stroker, cam

change, six carburetors, boxed rods, etc.) for the roadster. At the same time I rebuilt the car, painting it a new brown color and updating some of the mechanical items.

This total rebuild almost ended as abruptly as it started. My mother and dad were visiting me from Toledo, Ohio, and their bedroom faced the back of the garage through a small courtyard. When my father woke up in the morning, he was able to look out his window through the courtyard, into the small window of the garage and could see daylight on the other side, meaning the big garage door was open. He came and woke me and



asked me if I had been working in the garage, and I said no, and went out to take a look.

In the middle of the alley, behind the garage was sitting the roadster crosswise in the alley. It was loaded to the hilt with all of my parts. The garage door was open and much of my equipment was missing. Obviously, it was an attempted theft. They had loaded their car with the small items that they could carry, with the balance of the material in the



*You can see Tom had turned from customizer to hot rodder, with two deuces and a '34. Orange Vicky became Jim Clark's. Both those Chevis (below) were in that Austin.*



roadster, pushed it out the door, and were ready to tow it away with the chain that was still laying there. Something had scared them away. I reported it to the police, and they had gotten the license number of a car in the alley earlier that same morning. In chasing it down, they eventually caught the thief in a city nearby. When the thing finally ended up in court, after receiving threatening phone calls from his parents, and him, not to prosecute, the



thief was finally let loose on probation with the charge of a misdemeanor against him. I never received any money or my parts back. My luck, (bad) was still holding.

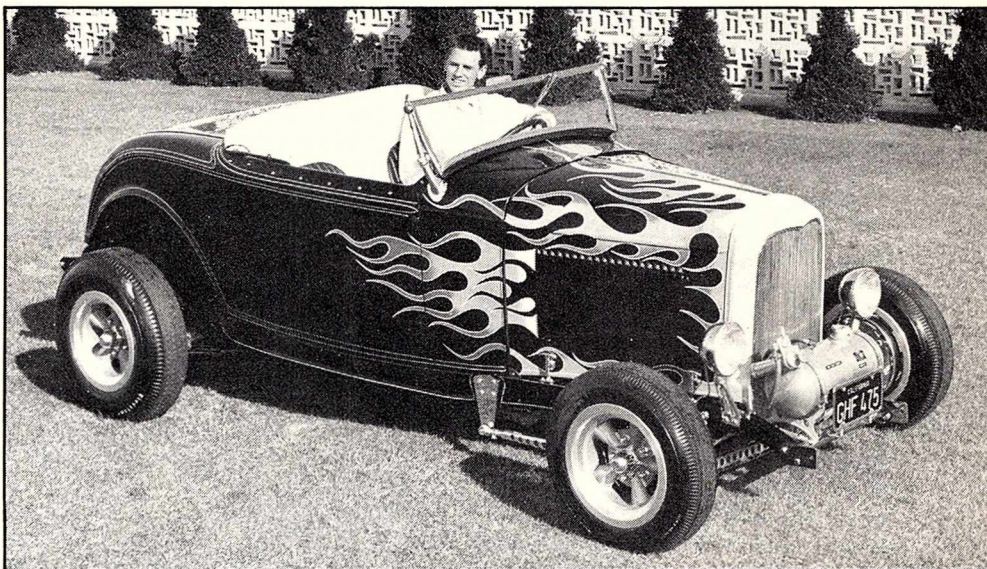
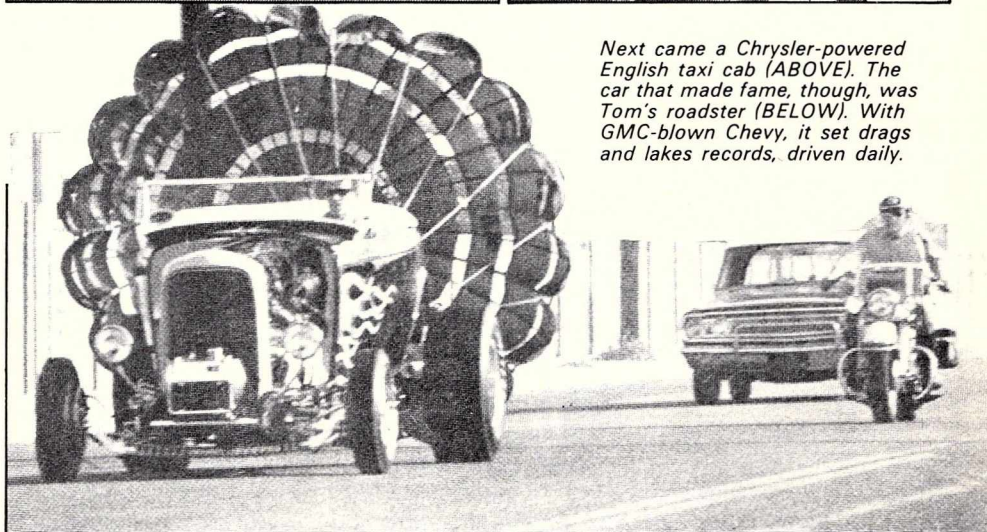
What prompted the engine rebuild to start with was that I started street racing against ordinary vehicles, beating them quite badly. One day a Corvette chose me off at a gas station near my home and he promptly blew my doors off. I couldn't stand it. So now I had what appeared to be an unbeatable street racer. About this time I came in contact with the L.A. Roadsters, five of them to be exact, while the club was new and small. This became the Thursday night run to Hollywood to meetings and runs on weekends. I soon became President for two terms and Secretary for a couple of terms, being very active in the club. Soon I got racing into my blood, too. I began quarter mile racing, half mile racing, El Mirage racing, and street racing. We ran Fontana on Friday night, Saturday night at Long Beach, Sunday at Pomona — driving to all the strips and driving home. We weren't very fast in those days (12 second car) but it was fun and the trophies were neat.

I acquired a '34 Ford Sedan in pretty bad shape for \$35 bucks. It was in a yard on a movie location near a hospital in Tarzana. I trailered it home behind the Victoria, later installed an Olds and hydro, detailed it, painted it black with the original wires, and it became another new car. We now had two '32's, and a '34. The Roadster began to stay in the garage and became a night runner. My wife, Joan, was now working at Sears and Roebuck in Compton, but she got transferred to Buena Park. I graduated from school with an AA degree and found a job with Beckman Instruments in Fullerton, California. We bought a small home in La Habra and moved bag and baggage. I drove the '34 sedan to Beckman and she drove the Victoria to sears. The roadster still stayed at home as a street racer and fun car. I helped Carl Caspar put on a San Diego Roadster show which brought in a bunch of money which I used to buy the blower for my roadster.

As you can see, I was still working heavy on the Roadster. Showing and racing it. One day while coming home from the Long Beach drag strip, while still living in Compton, the six carburetors belched, caught fire, and the whole front of the car burned. That was while it was still painted brown, after the Lynwood rebuild. About this time I had met Tex Smith from Hot Rod Magazine, through the L.A. Roadsters, and he prompted me to shoot the car



*Next came a Chrysler-powered English taxi cab (ABOVE). The car that made fame, though, was Tom's roadster (BELOW). With GMC-blown Chevy, it set drags and lakes records, driven daily.*



with this new stuff called metal flake. I took it to Cerny's Paint Shop on Long Beach Blvd. in Compton, and he sprayed the car in Metallic green over the metal flake. Being as how no one knew anything in these days, the metal flake was not scuffed and the green was shot over it. It absorbed it quite badly and became very shadowed. The clear didn't help it. I drove it that way for a few months, but couldn't stand it, tore it down again, and painted it black. It didn't look right, so after a month or so, I tore it down again, stripped the body to bare metal, and shot it in black again

with its first flames.

I decided after two years at Beckman to quit and open Auto Electric Engineering. With the help of Carl Sulkey, the shop went on for a year or two. We did great wiring jobs and a lot of engine swaps. Tex Smith from Hot Rod Magazine came down to see me and asked me, if I had some time, to write down how to wire a car. He would like to do a story on wiring Hot Rods. I sat down one night and wrote the whole thing up for him. He came down a few days later and took a few pictures and told me that the thing was pretty good.



# "AUTO" BIOGRAPHY

About three months later he sent down a magazine with the Micky Thompson Indy car on the cover and low and behold, there was my wiring story, just as I had written, with a by-line of "by Tom McMullen" . . . my first story. Tex told me it was so good that he went ahead and put in commas and periods, minor editing, and ran it.

It wasn't too long and I got a check in the mail for a couple hundred dollars. Boy, was that neat. Later I kept talking to Tex about doing some other stories with him and asked him how I could shoot things myself. He told me, in great detail, that I should buy a Minolta Autocord twin reflex camera together with a light meter and a Honeywell Strobe, and start shooting my own stuff. I did these things. My first insight to photography and writing was really neat. As more time passed I started making wiring kits and mailing them around the United States, but the local work began to taper off.

That summer, when I was back at the National Drags working an inspection line in the staging lanes, here came this Corvette with Wild Rose written on it. It was a girl driver trying to sneak through wanting to drive her own car. Of course, I turned my head a little bit and let her

go. We became very friendly and I tried to coax her to come to live in California. I told her things were great out there and that she could really enjoy drag racing.

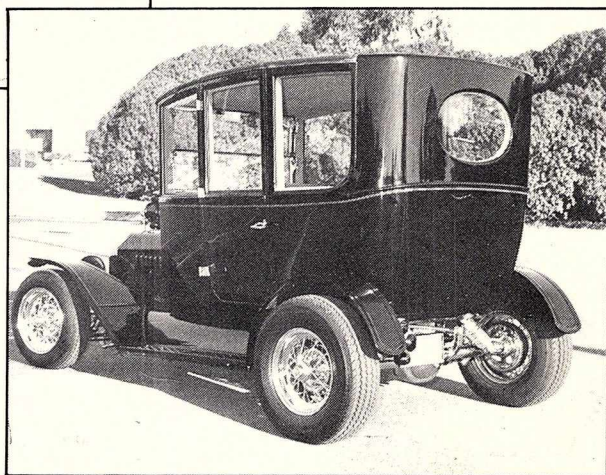
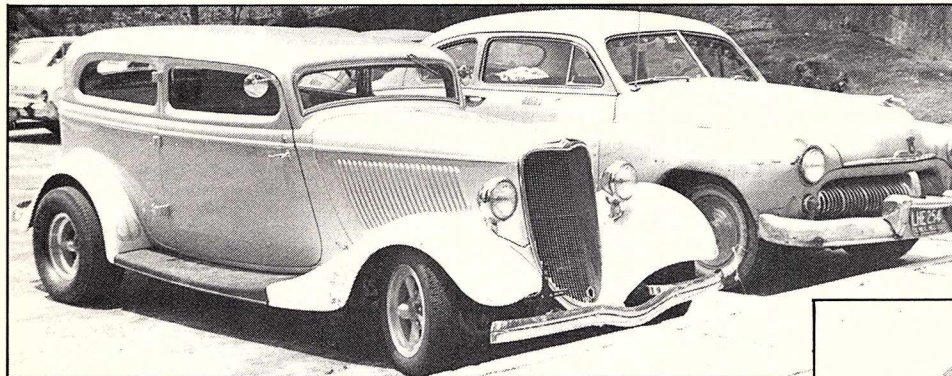
A year later, at A.E.E., I acquired a beautiful tandem wheel car trailer, tore it all apart, repainted it, and put flooring in it on the front and sides. I, a fellow that worked for me named Ted Tardy, and a friend named Tim Kraushaar, decided to load the roadster on the trailer and tow it with my six cylinder Chevrolet Station Wagon to Indianapolis for the drags. We'd stop and visit my folks in Toledo and sort of vacation it for a few days. We stopped at Toledo, ran at the drags at the airport, showed off with the car all over everywhere, loaded it back up and headed for Indy and the Nationals. We stayed at Howard Johnson's and went to the strip. Each day I met some fellows there from Cleveland who were running an orange street roadster, and I thought it would be neat to be a push car for them. We built a push bar for the front of my roadster and had it ready to go. This was my second year back there, so I naturally met a lot of old friends. One of whom was Rose. She ran a Hilborn Injected Corvette and was sneaking through driving — which was still

somewhat illegal at that time. This particular year I was walking through the pits when I saw her bent over her car changing spark plugs. I stopped to talk to her.

I mentioned again that she should come to live in California, telling her how great the racing was, the weather, and so on. The next day while pushing the guys with their street roadster, they fired it before I let go and bent the pushbar back and smashed my grill shell and radiator. I felt very depressed and loaded the car on the trailer and we headed for home. It was raining very hard when we were coming through the Cajon Pass (San Bernardino area) and while rounding a turn the total mess of vehicles went straight ahead off the road and out over the railroad tracks, tearing all the wheels off the trailer and the station wagon. We got the train stopped which was coming toward us by sending Tim up the tracks with a flash light. Later that morning, the wreckers came and got everything cleared off the tracks. The next day, we came out and got all the wreckage back home to La Habra. The station wagon I repaired and traded off for a Dodge Sedan. I repaired the grill-shell and radiator, putting the roadster back on the street within a few days. For the trailer, we got new wheels and axles and had it repaired within a few weeks.

About a month to a month and a half had gone by while making all of these repairs. One day I received a phone call from Rose, who was in New York. She asked me about the job situation in California and so on. I told her to send me a resume of what she could do and I would look around to see if I could locate a job for her. A few days later, instead of the resume arriving, Rose arrived with her sister-in-law and the Corvette on a trailer.

*(Continued on page 63)*

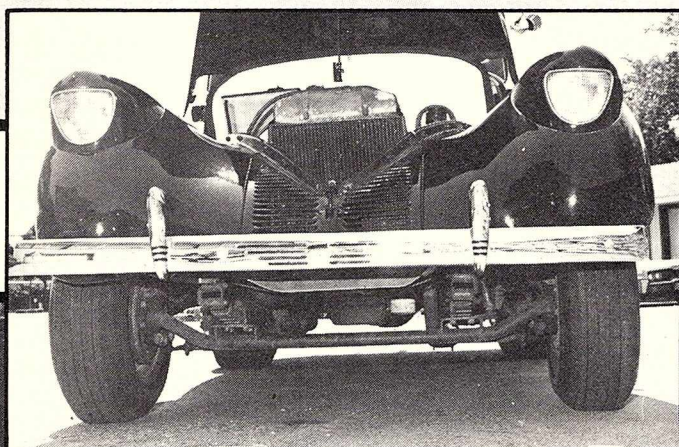
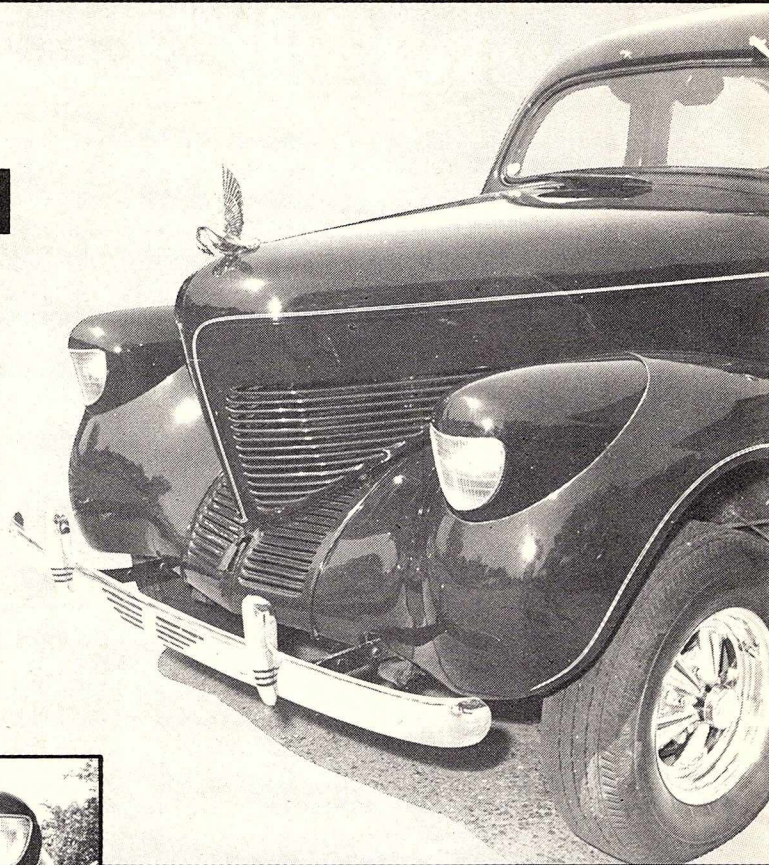


*The recent stable has included a "bought" '33 chopped sedan, and a center door T. The trick-painted/custom interior van is current transportation.*

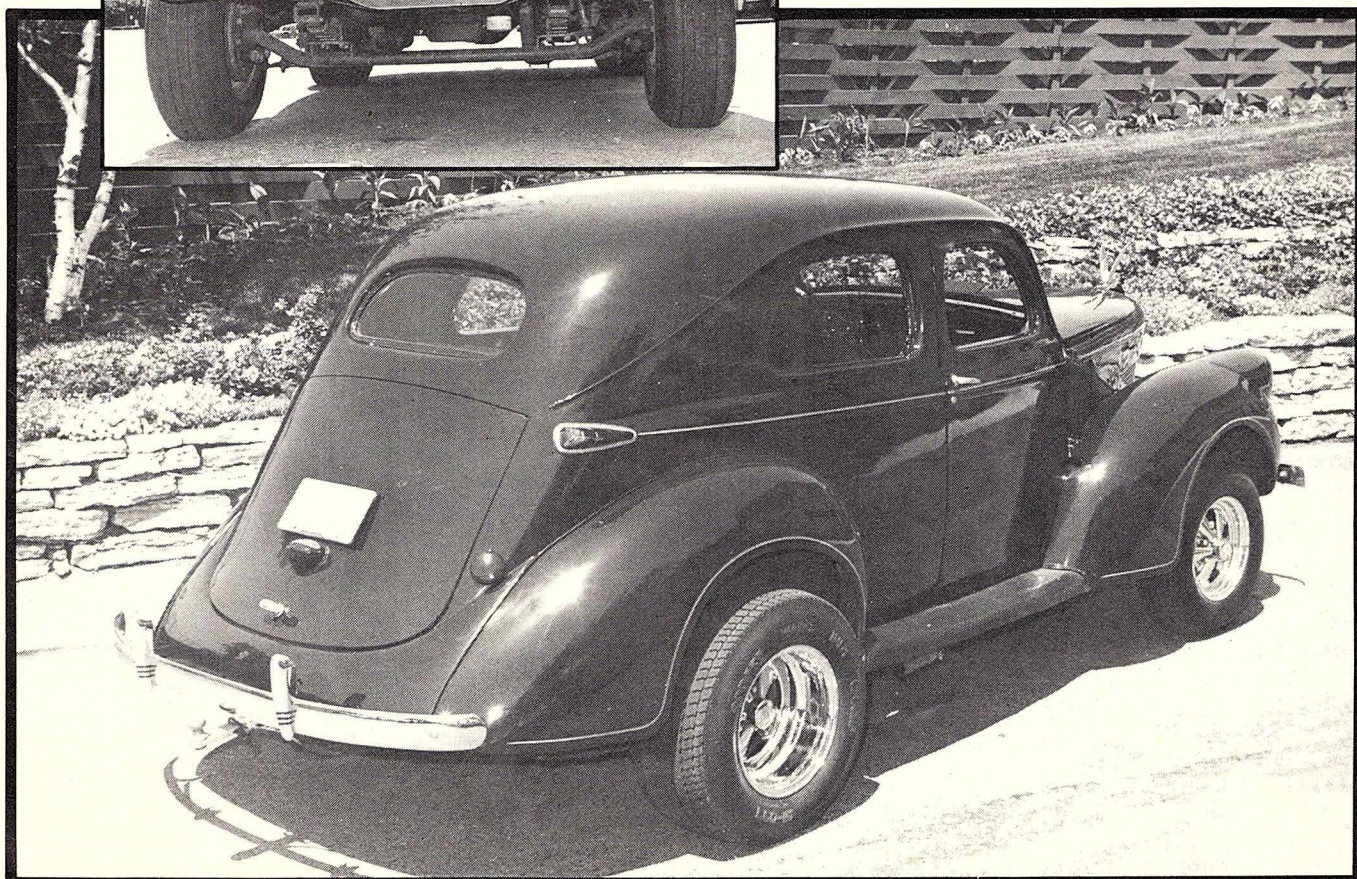


A Canadian street rod rendition of the car that looks like a caricature.

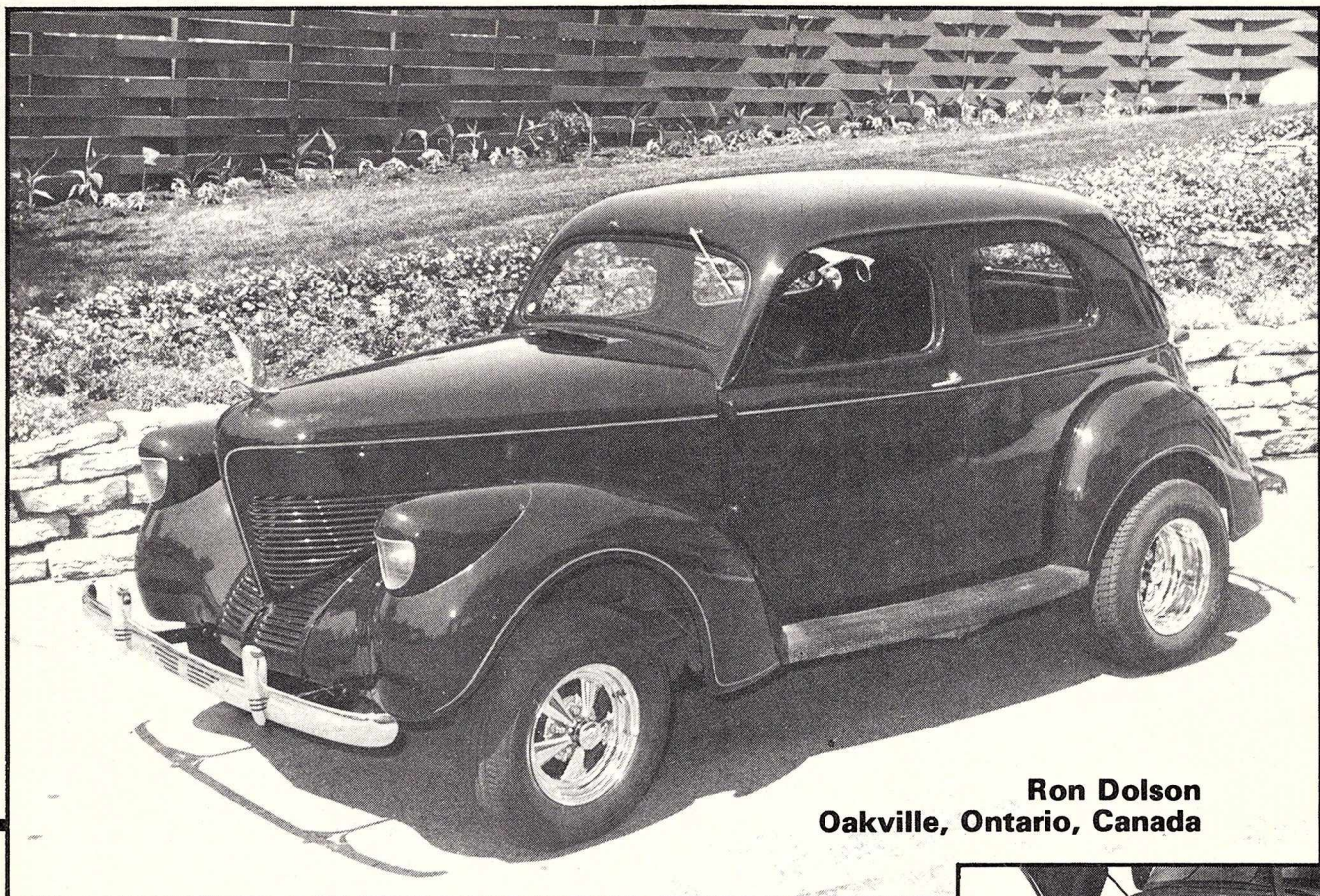
# FUNNY CAR



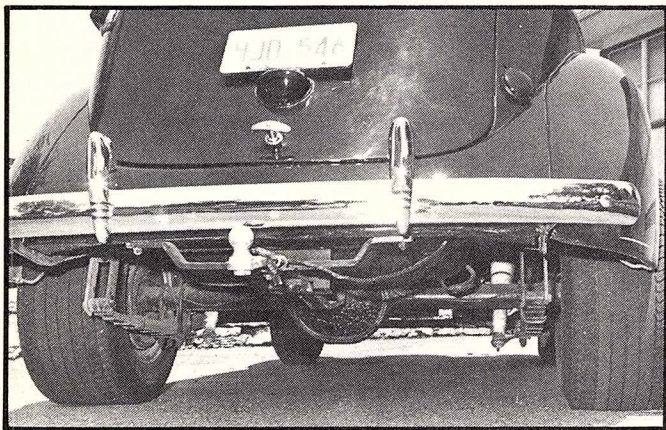
*Actually, we think Ron's car is pretty NEAT looking. It is also quite rare—Ron has found only one other 2-door sedan. The midnight blue enamel is polished like glass; light blue striping for accent. Tube axle at front carries Ford Econo-line spindles.*



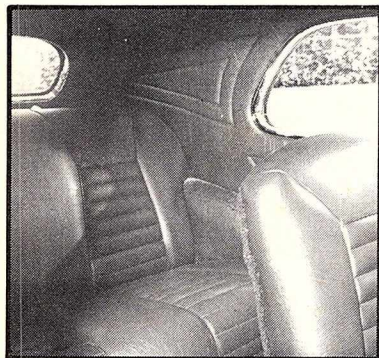
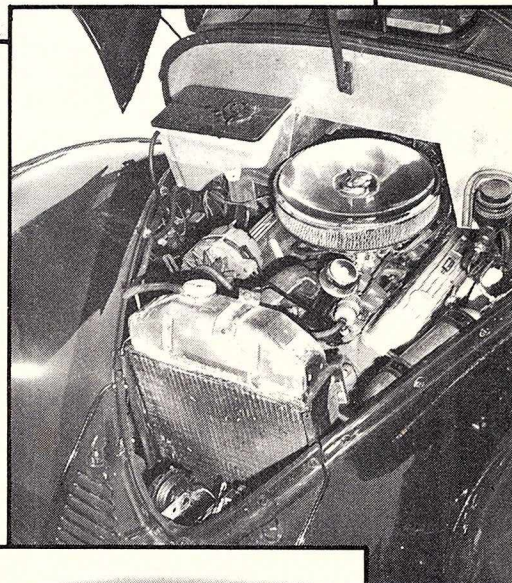




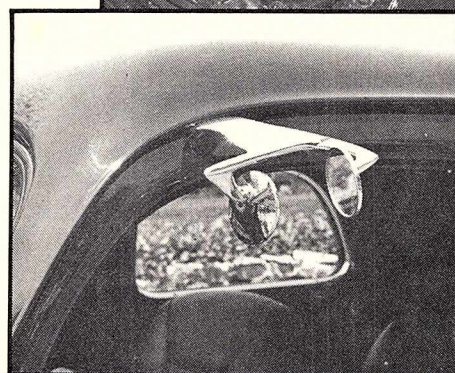
**Ron Dolson**  
Oakville, Ontario, Canada



*If things underneath don't look as neat as a pin, it's because Ron had just arrived in St. Paul when we snapped the pictures. A 301 Chevy makes it go (283 bored 1/8), has F.I. heads, 350 cam. Trans is Turbo 400, and the rear end is beefy '58 Ford wagon unit with addition of Detroit locker center section. As you can see, this car is built to perform, and it is built to hold together. Trailer hitch shows it's meant to travel, too. By the way, head and taillights are original.*



*Black naugahyde interior is one of nicest we've seen. Was stitched by Custom Auto Trim of Toronto.*

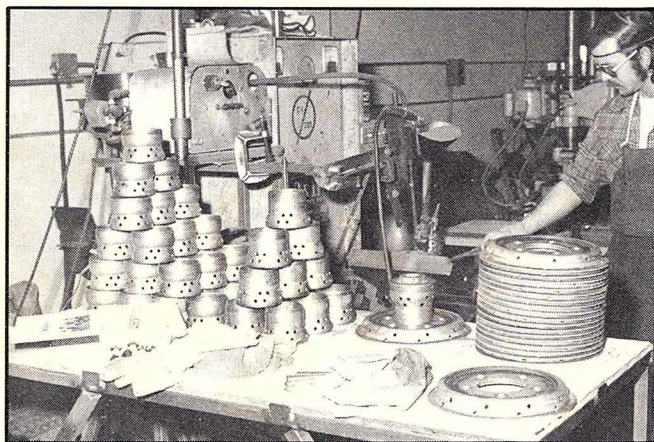


*Did you notice the trick rear-and-front view mirror? Was accessory item in '39.*

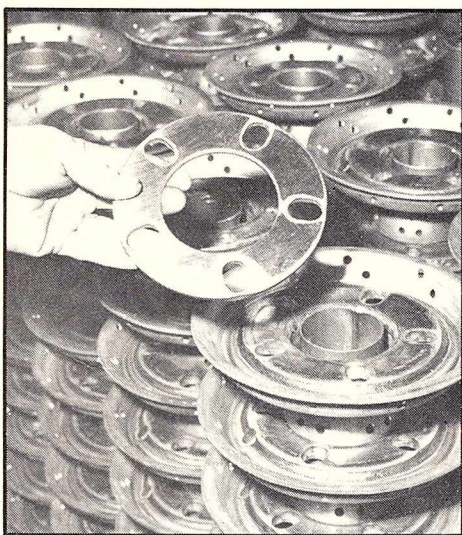




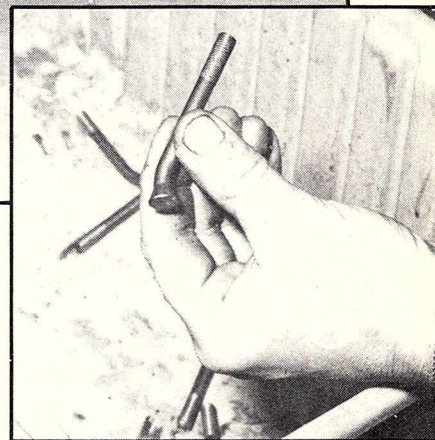
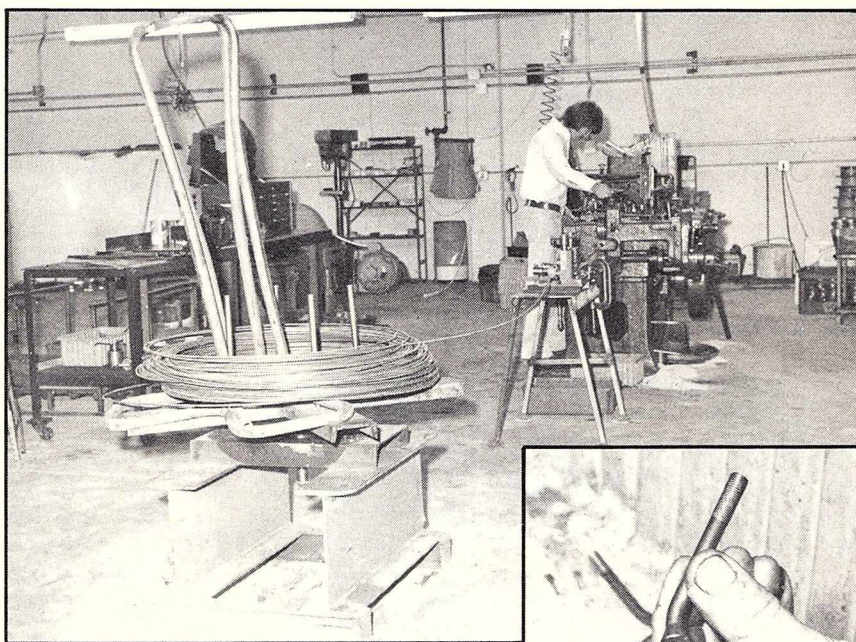
LEFT—Beginning with basics: hub starts as section of 9 ga. steel tube. It is machined, expanded, and punched with holes.



ABOVE—Likewise the flange is stamped and punched; then the two are welded together in specially-designed machine.



ABOVE—The welded "center" then receives a 1/4" steel plate stiffener, which is heli-arc'd to the flange.



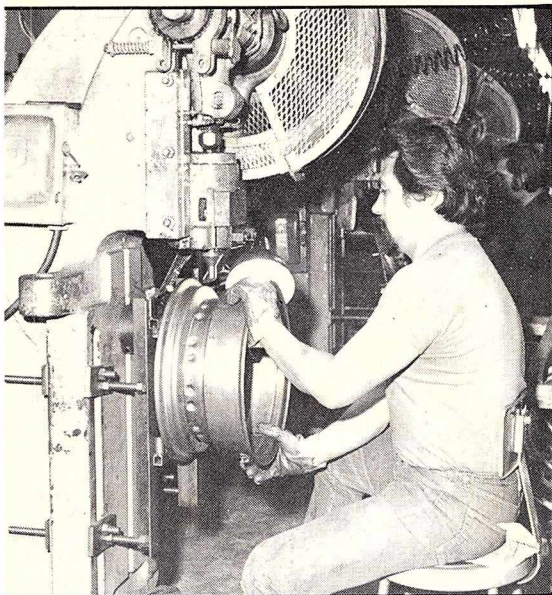
Spokes begin as raw 1/4" steel (8340) wire. They are run through header, cut, bent, tumbled (for polishing), and roll-threaded—to look like example at right—before being sent to plater.

It was a natural. Only so many Buick Skylarks were produced, and that was twenty years ago. A set of Skylark wires with decent chrome will run from \$400-\$600 at swap meets — if you can find them. So Kurt Lohmeyer, owner of Wheel Specialties Company (2130 E. Orangewood Ave., Anaheim, CA 92806), got together with his plant manager Rick Pate and they decided to switch production from motorcycle spoke wheels to a complete new line of automotive after-market chromed wire wheels, patterned to resemble closely the old Buick Skylarks in appearance.

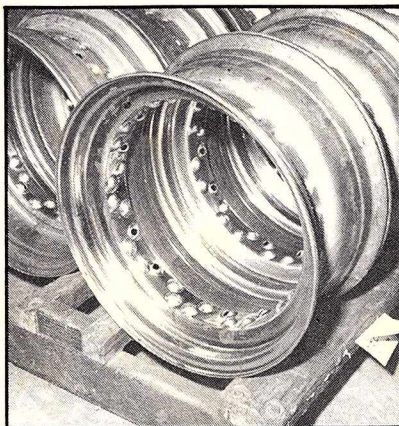
Actually, the "Tru-Spoke" wheel is slightly simpler in design than the Buick (it uses three different spoke lengths in each wheel, instead of six), but it is also stronger. They are still going to cost you around \$600 a set. But unlike early Buicks, they are freshly plated, they haven't built up twenty years' worth of fatigue, and they are available in five different bolt patterns, 14 or 15 inch diameters, 6 to 10 inch rim widths, and laced in either standard off-set or "reversed." Sure beats rebuilding a set of rusty old Skylarks that you still pay through the nose for after months of swap meet hunting.

# REPRO WIRES

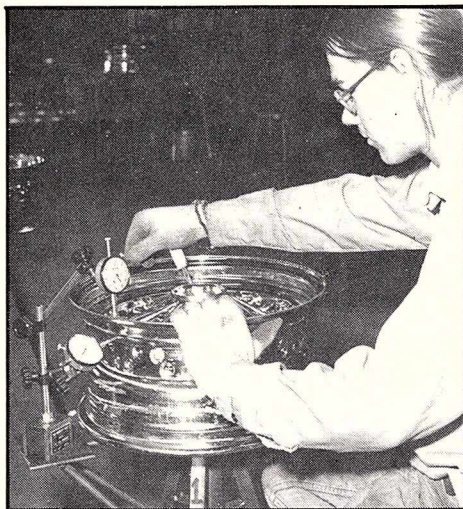




*LEFT—Rims are bought pre-formed; must be polished, then "dimpled" on this big punch.*



*ABOVE—After dimpling, spoke holes are punched in same manner. Alignment is critical.*



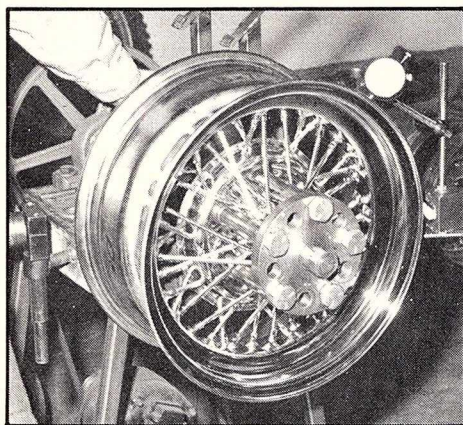
*TOP RIGHT—After everything is plated, wheels must be laced. Special stand holds hub; spokes arranged by hand.*

*LEFT—Then each wheel must be trued for both roundness and alignment. Dial indicators make work as accurate as possible.*



*BELOW LEFT—Then each wheel is again spun-tested on this machine to check for trueness.*

*RIGHT—Plant manager Rick Pate sets up wheel to be stress tested on special machine. Wheels pass test specs beyond those for Cad wires.*



**by Pat Ganahl**

**A look at how  
Wheel Specialties  
makes aftermarket  
wire wheels.**

*RIGHT—SEMA hasn't set standards for wire wheels yet; but Wheel Specialties has sold 3000 wires . . . and no complaints.*

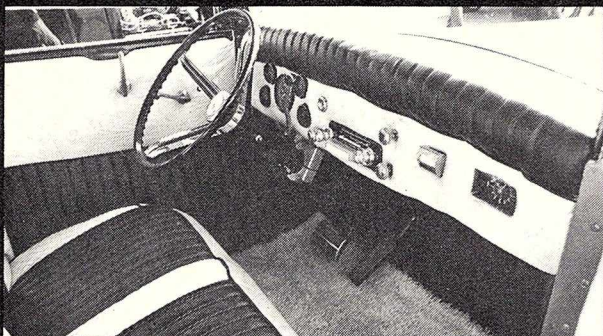




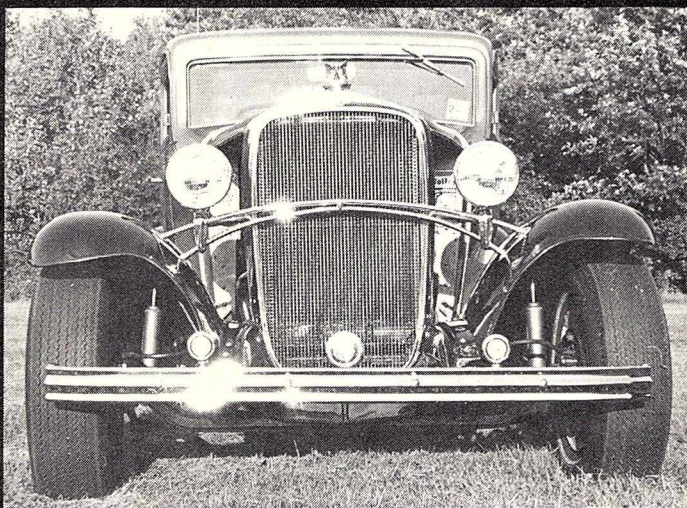
# PENN STATE STREETEER



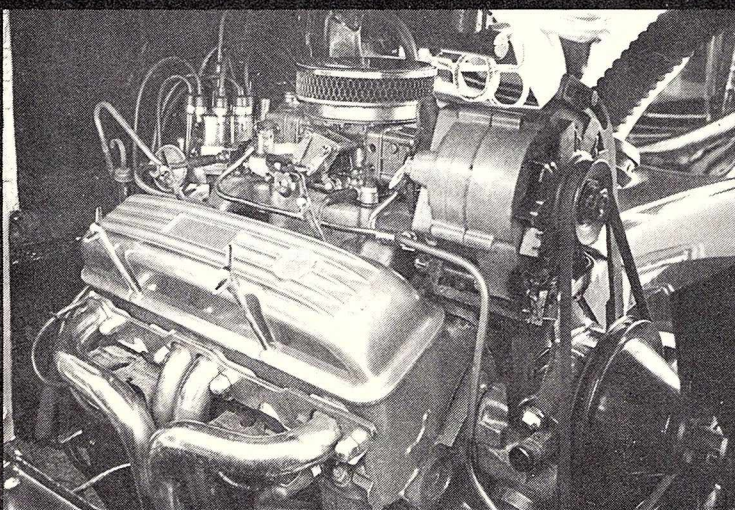
*Besides getting a lid-lowering of four inches, the top has been fitted with plexiglass "sunroof." Black and white 'hyde covers interior.*



**It may be hard to build an outstanding street legal rod in Pennsylvania, but as you can see, it's not impossible.**

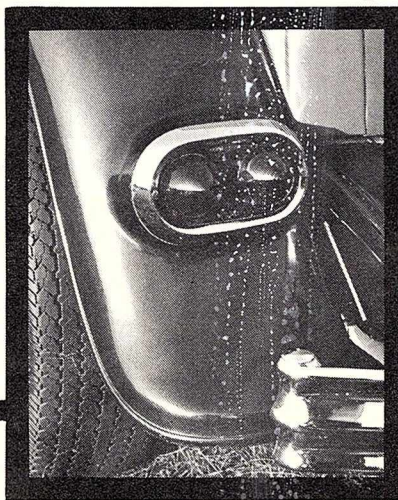


*ABOVE—Candy tangerine coats the body; fenders are '72 Cad Firemist brown. '32 Ford bumpers replace hard-to-find Chevy ones. Stock front axle is fitted with '54 Chev brakes & hubs*



*F.I. spec 327 delivers punch to Turbo 400, '57 Chev rear (3.70). Car is also fitted with '62 Chev power steering and brakes, '68 Caprice tilt column.*

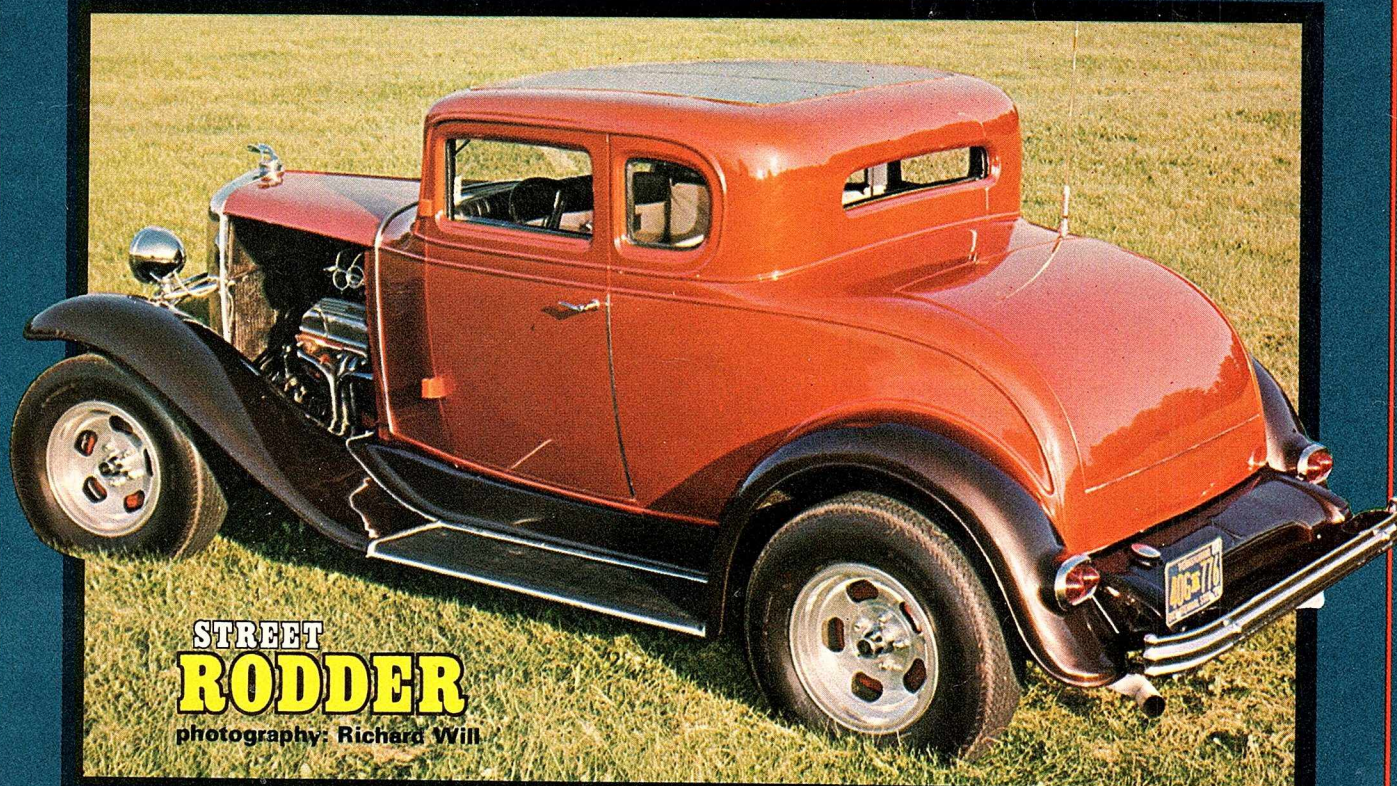
*BELOW—Neat little custom touch are '50 Buick Roadmaster taillights molded to rear fenders.*







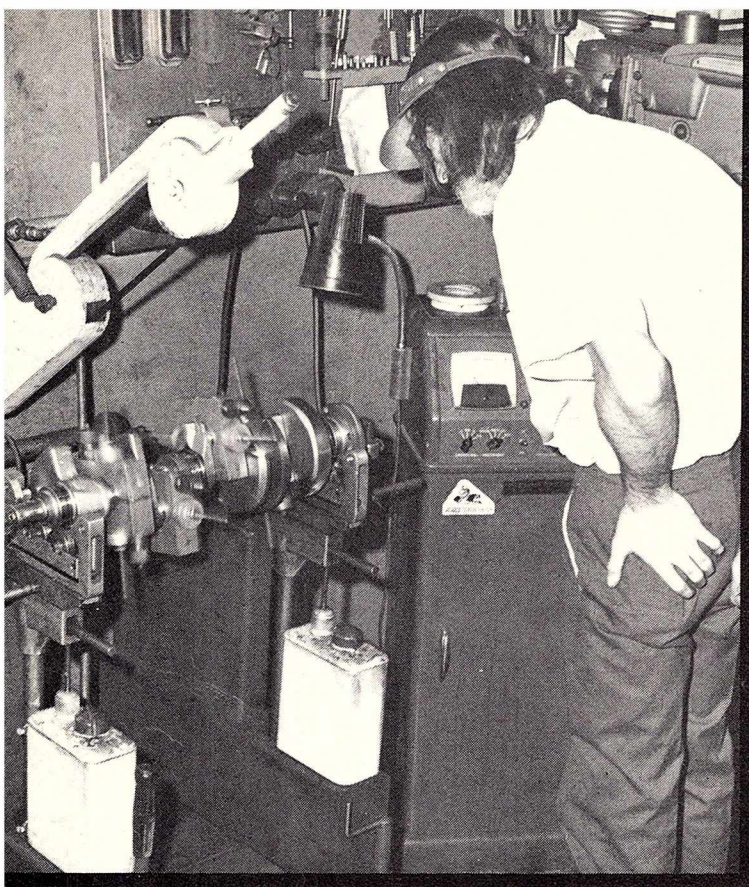
Vince Barber  
Brookville, Pennsylvania



STREET  
**RODDER**

photography: Richard Will





**For about \$60 you can have a smoother, more powerful, more efficient, and longer lasting engine—why haven't you done it?**

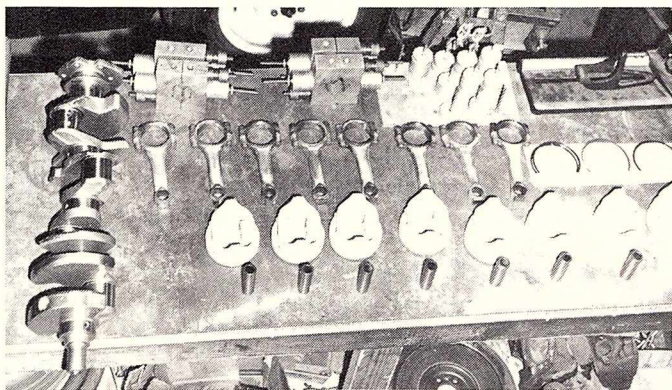
**by Frank Oddo**

**W**hen the typical street rodder decides to build a powerplant for his pride and joy, he immediately becomes more dollar conscious than he is when preparing to paint the car, or when he picks a trim shop . . . or even a hood ornament. Just why this is, I'm not sure, but it has been my observation.

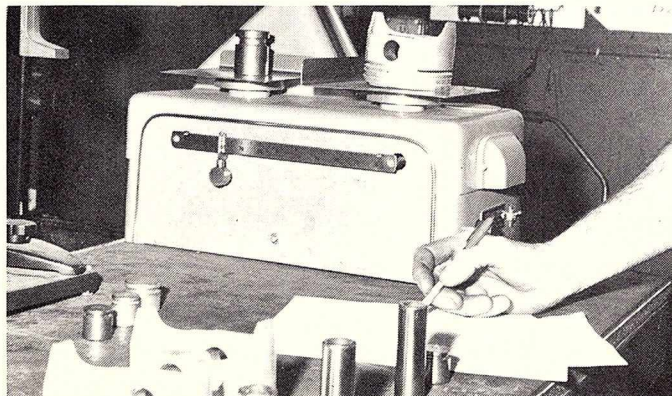
If you were to press me for a guess, I'd have to lay it to the fact that even though motor reliability is unequivocally demanded, it isn't nearly as visible as is paint, upholstery and accouterments. Consequently, parting with an extra \$60 for something as intangible as engine balancing sometimes gets outweighed by other more visually pleasing considerations.

Now, it is true that precision balancing is not so critical that the motor won't run properly at low rpm or street cruis-

# ENGINE BALANCING



*Mechanical balancing of an engine's rotating and reciprocating parts is necessary because the centrifugal force acting on them must be equal in all directions around the radial axis of the crank. Only then can the assembly rotate freely and without vibration.*



ing speeds. Nonetheless, vibration, reflected only in a lack of smoothness at the low end, can be a bearing killer when you're honking it on.

For instance, late model crank assemblies are balanced by the factory and *quantity* rebuilders to about one-half ounce-inch static unbalance. (Static unbalance exists when the center of gravity of a rotating mass does not lie on the axis of rotation, but at a distance from it.) Now, centrifugal force (that exertion which impels a rotating mass, or part of it, outward from the center of rotation) increases as the square of the rpm increases. Simply stated, tripling the rpm increases the centrifugal force nine times.

What this means is that an average small block crankshaft with a half ounce too much weight in one counterweight will be out of balance to the tune of 27 pounds at 3000 rpm and somewhere around 100 pounds at 6000 rpm!

The elimination of such "tolerable" unbalance can significantly lengthen the useful life of bearings and seals, more than compensating you for the cost of a balance job in a quality automotive machine shop.

Let's take a closer look at the physics of static, force (kinetic), and couple (dynamic) unbalance. In static unbalance, (Fig. 1) only weight force (gravity) is exerted. If we place a perfectly balanced rotor on frictionless rollers, no matter where we turn it, it will stay. However, if we add even a minute weight at any distance from its axis of rotation, the gravitational force acting upon that weighted portion will pull it down to its lowest point.

*The first step in a precision engine balance is to weigh each component. A record is kept of the type of pistons, rings, and rod bearings and their weights. When the lightest piston in the set is found, it becomes the standard for the remainder.*



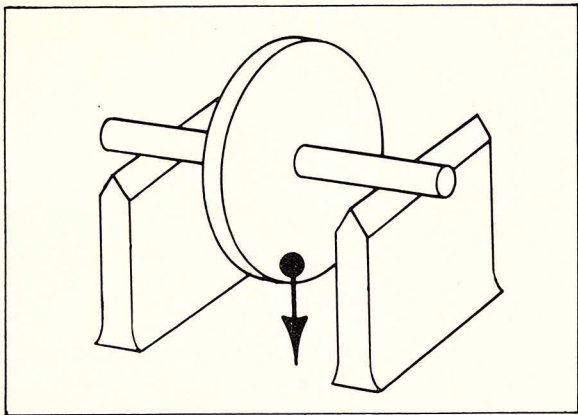


Fig. 1) Static unbalance exists when the center of gravity of a rotor lies at a distance from the axis of rotation.

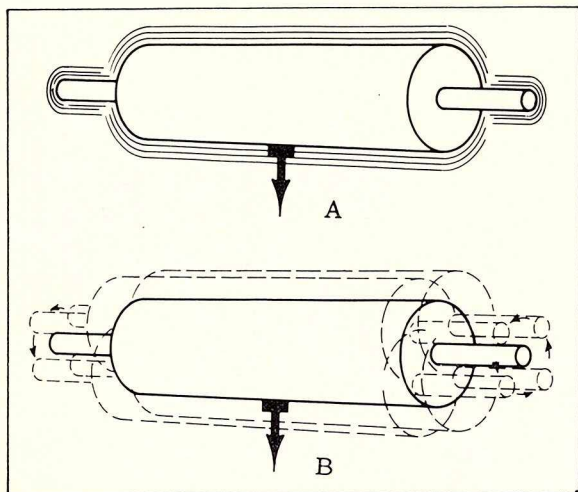


Fig. 2) The vibration depicted in "A" (force or kinetic unbalance) is caused by the rotor trying to move as in "B."

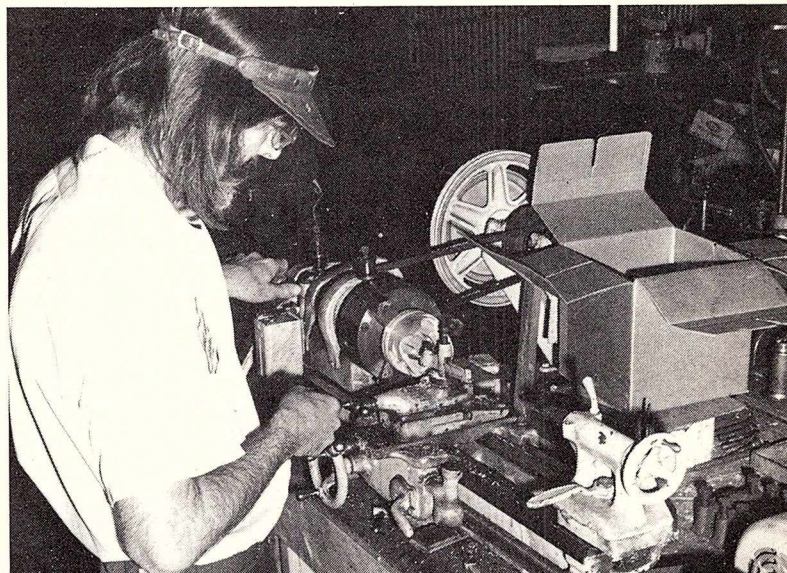
This is because the radial center of gravity of a perfectly balanced rotor is located at the axis of rotation. By adding the weight we shifted the radial center of gravity away from the axis of rotation and created a condition of static unbalance.

Simple enough, right? Now, when we rotate that statically unbalanced rotor, we set up a condition of "force" or kinetic unbalance. The centrifugal force we just mentioned tends to deflect the rotor in the direction of the force and results in a vibration at the support bearings. (Fig. 2)

If our hypothetical rotor has any flexibility it will bend in the direction of the unbalanced force (and crankshafts do). Not only that, even this micro-bending increases the amount of unbalanced weight.

Suppose we next add two equal weights 180 degrees opposite each other on our rotor, and put it back on those frictionless rollers. (Fig. 3) The force unbalance has been removed, and no one point will roll to the bottom. However, when the rotor is revolved, each weight will exert a centrifugal force tending to deflect the rotor in its direction. Because the forces are operating in opposite directions, the rotor is said to be forming a "couple" or dynamic unbalance vibration.

In actual motor operation, the couple is confined within the crankshaft bearings and the unbalance force exerting itself against them results in vibration and wear. There are other sources of vibration, particularly the abnormal variation in the combustion pressures exerted on cylinder walls and com-



ABOVE—Each of the heavier pistons is then chucked in the lathe and material is removed from the inner skirt pad to make it equal to the lightest. Ordinarily, the rings, pins and bearings do not vary much within their sets so no alteration to them is necessary.

RIGHT—Weighing and balancing the connecting rods gets a little more complicated. Both the big and little ends must be weighed separately by suspending one end of the rod and reading the weight of the other end on the scale.

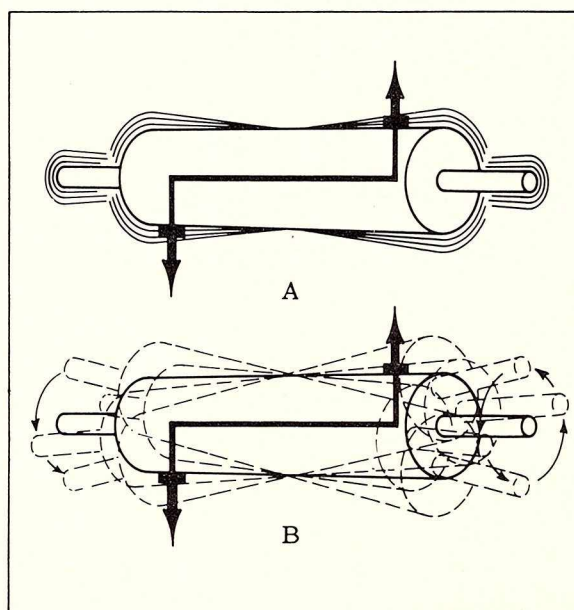
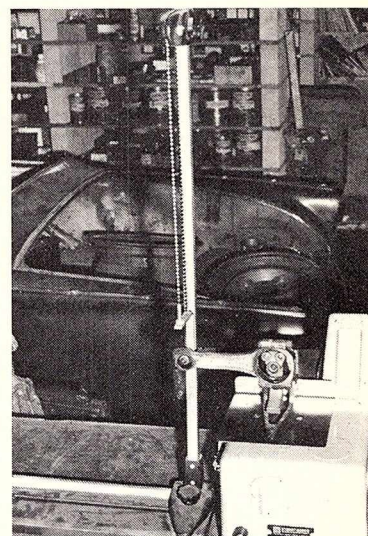


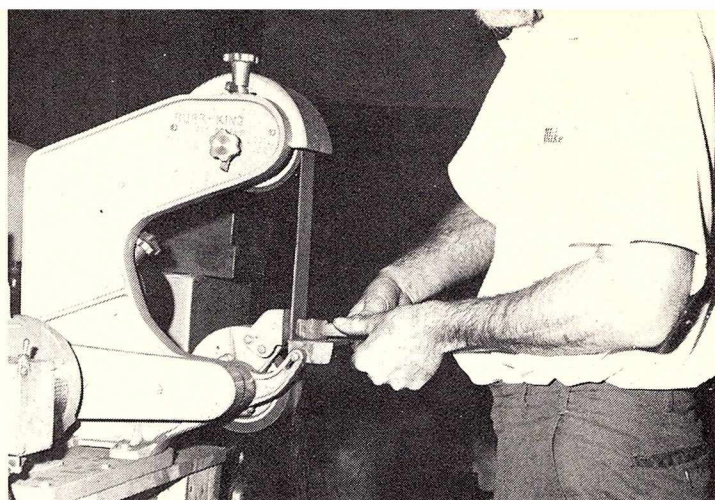
Fig. 3) The vibration depicted in "A" (couple or dynamic unbalance) is caused by rotor trying to move as in "B."



bustion chambers, (detonation and pre-ignition), but since they are not corrected within the scope of engine balancing, we'll pass on them for now. Most unbalance conditions in automobile engines are a combination of force and couple unbalance in the rotating and reciprocating parts of the crankshaft assembly.

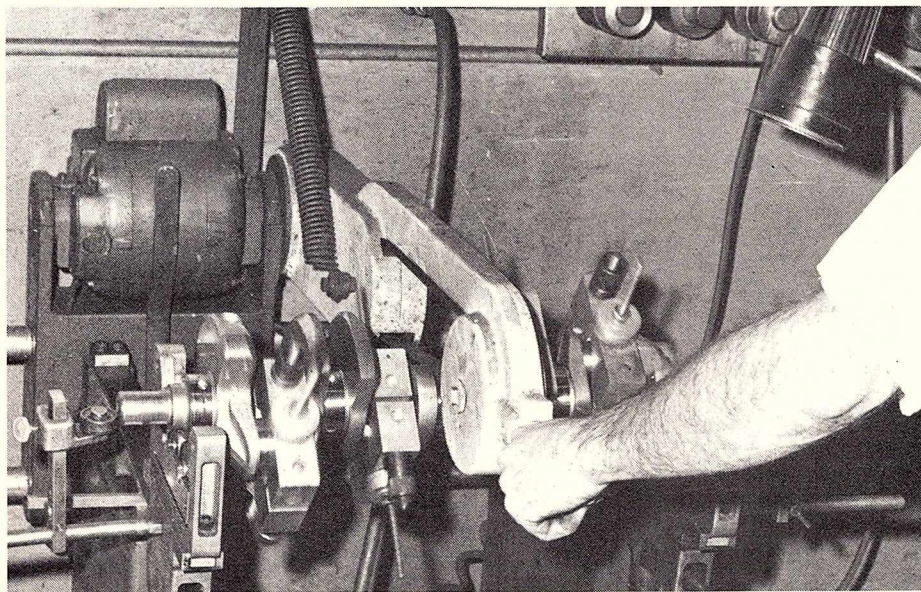
The accomplishment of a reasonable mechanical balance of the crank, rods, piston, flywheel and clutch is done at the factory. But as we pointed out, the tolerances acceptable to mass producers are much greater than the precision electronic balancing done by conscientious machine shops like Allen Hail's Percom Engines, 648 W. Williamson, Fullerton, Calif. Down at Hail's, tolerances are kept below 1/2 gram for pistons and rods, and 1 gram-inch for cranks and flywheels. Since *factory* balancing is "right on" if they can get 4 grams and 14 gram-inches respectively, it isn't hard to see why a blueprinted and balanced rebuilt motor is going to be a much more smoothly performing unit.

For a better idea of what goes on in this process, let's watch over Mike Haslam's shoulder as he brings a small block Chevy into near perfect static and dynamic mechanical balance.



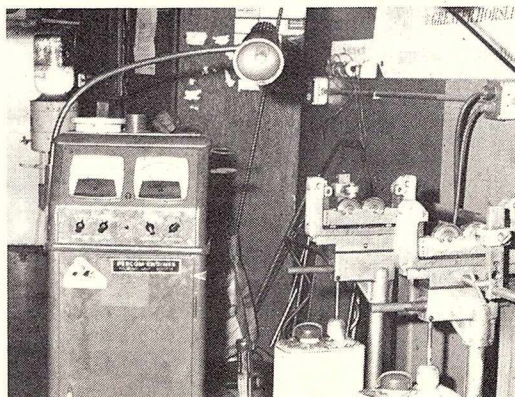
*The weight of each end of each rod is brought into line by removing material on a deburring machine. Three separate unit weights must be equalized — the big end, the little end, and the total rod weight. When removing material, good judgement — based on experience — is critical, otherwise one could spend many hours at the deburring machine.*

# ENGINE BALANCING

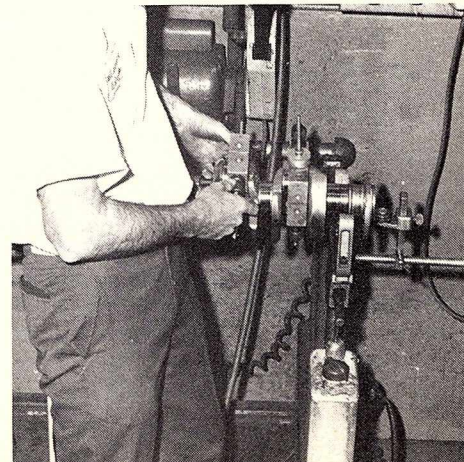


**ABOVE**—The mocked up crank assembly is now put into motion. The vibratory system of the Stewart-Warner Industrial Balancer changes the rotational deflection of the spinning crank into up and down motion.

**RIGHT**—The amplifier of the balancer is sensitive to .004 ounce-inch. The unbalance meter (left) indicates the amount of unbalance in the crank assembly directly in ounce-inches; the right hand meter is a tach. The strobe lamp illuminates the reference marks for locating the heavy point during balancing.



Once the pistons and rods have been weighed and balanced, it's time to do the crank. For it to rotate smoothly in its bearings, the crank must be in balance both statically (at rest) and dynamically (in motion). The unbalanced forces generated in a rotating crank assembly are measured in ounce-inches. One ounce-inch is an ounce of weight an inch away from the crank's axis (or a third of an ounce 3 inches away from the axis, etc.). Naturally the crank can't be rotated in the balancer with the pistons and rods bolted to it, so bob weights that duplicate the weight of the piston/rod assemblies are used. For V-8 engines the bob weight is built to 50% of the reciprocating weight and 100% of the rotating weight of two piston assemblies.

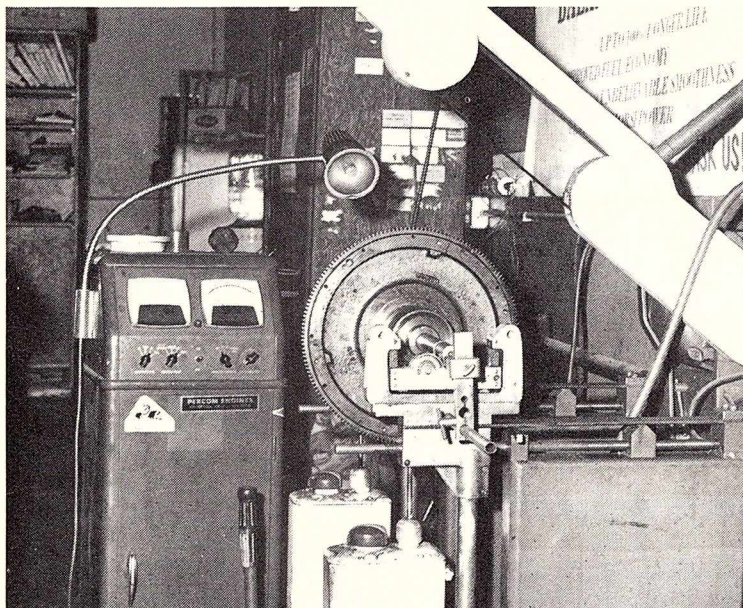
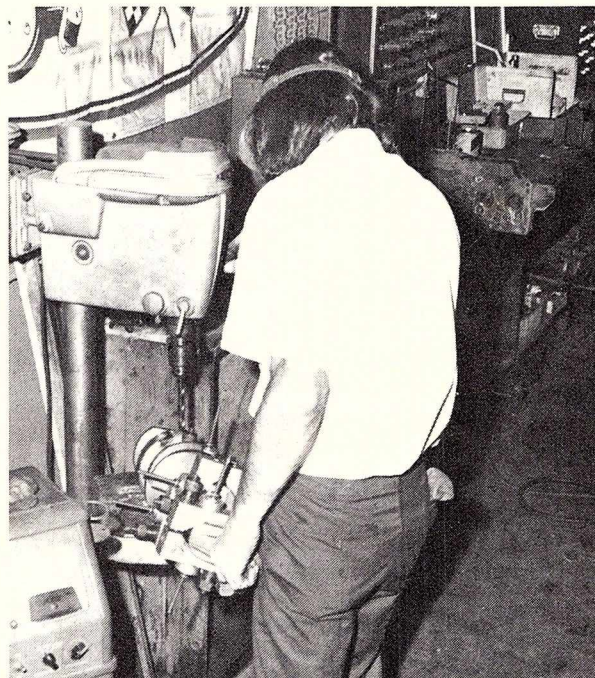






**LEFT**—Unlike the pistons and rods, some weight may have to be added to the crank counterweights. This is done by welding up some of the existing balance holes.

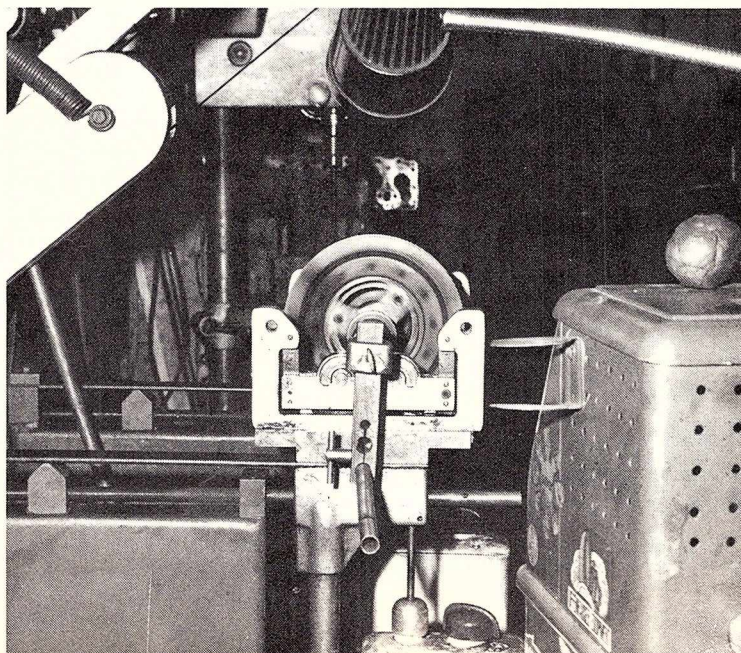
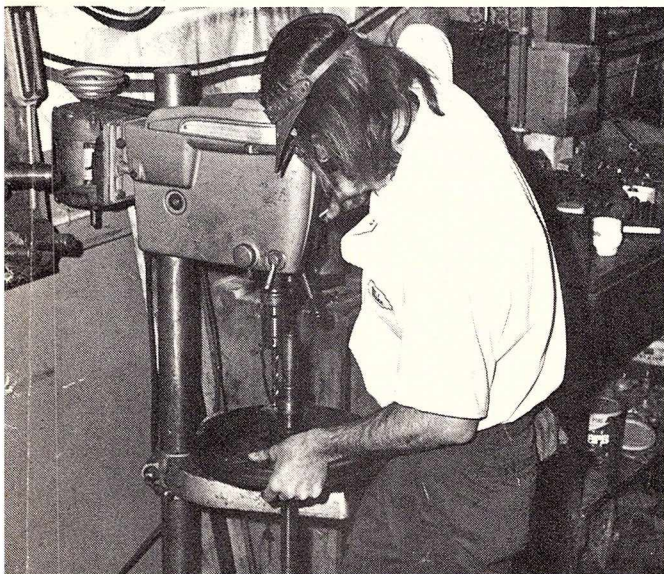
**BELOW**—After each weight change is effected, crank assembly is returned to balancer and rechecked, and perhaps altered again. Hardest part of the job according to Haslam is lugging the crank from balancer to welding table to drill press.



**LEFT**—The flywheel and clutch are usually balanced as an independent unit, and as in all other components of the rotating assembly, just a little bit of unbalance can cause big problems. For instance, an extra ounce at the outside edge of the flywheel will grow to more than 500 pounds of force at 6000 rpm.

**BELOW LEFT**—Again, when the location of unbalance is determined, material is removed from the flywheel by drilling. The clutch is next bolted to the flywheel and balanced.

**BELOW**—Chevy small blocks are "internally" balanced engines and the flywheel and harmonic dampener could be replaced with another separately balanced unit. Small block Fords, however, are "externally" balanced and the flywheel, crank and harmonic dampener are balanced as a single unit.

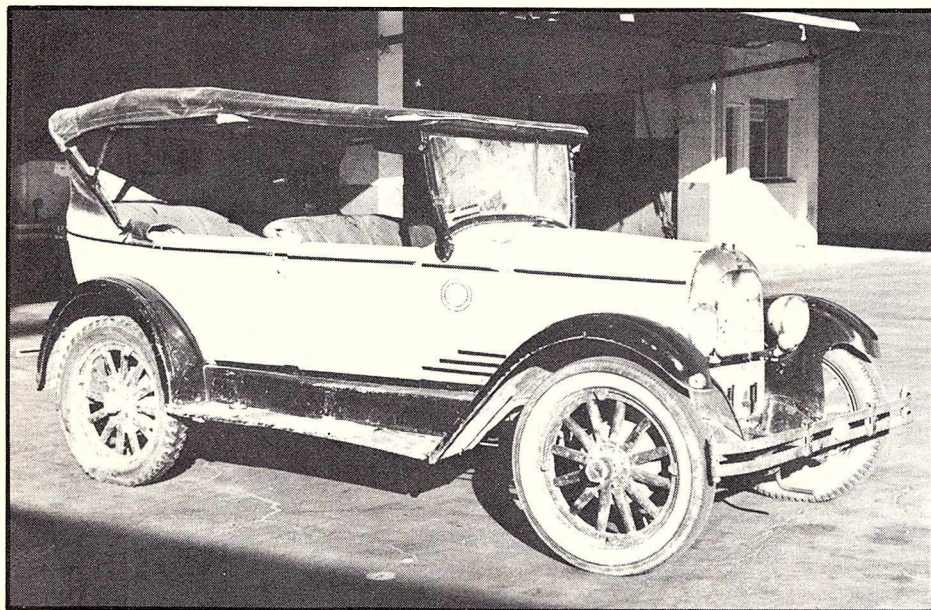






# the great ARGENTINE OLD CAR DEAL

**Bill Simpson and Steve Tavera  
are the first Americans to import early  
iron from this land of plenty.**



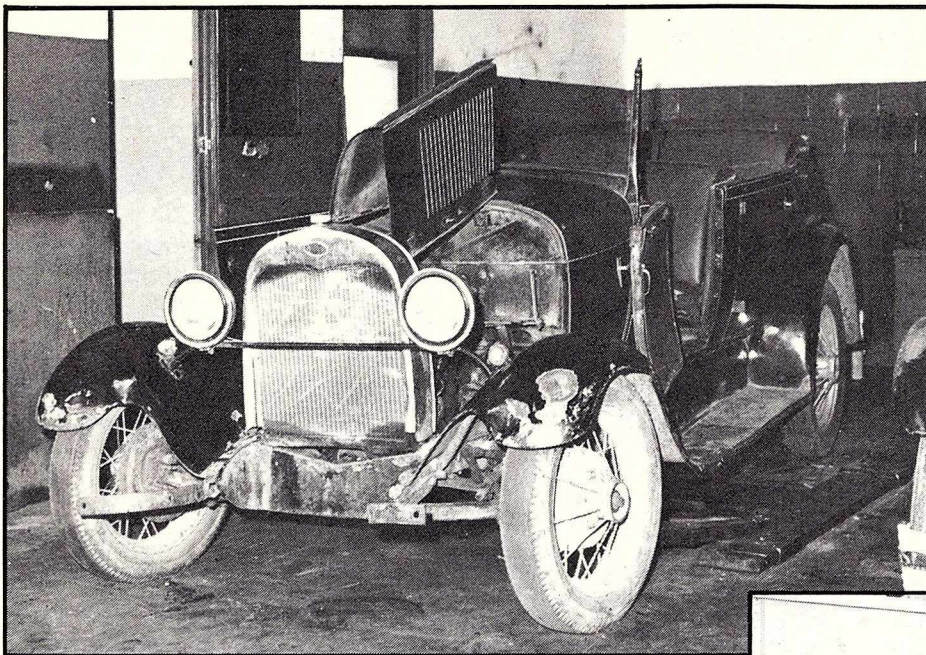
*One of the rarer cars in this first lot is a 1926 Overland Whippet. Supposedly the Touring model wasn't sold in the states.*

Every old car rodder or restorer dreams of a virgin land where the vintage tin has remained unspoiled and plentiful throughout the past half century. In the U.S. the pastures of plenty were the north-central regions — Montana, Wyoming, Dakotas — which escaped the scrap-metal drives of WW II. But admit it, our country has been picked comparatively clean. So a few years back some enterprising rodders went looking elsewhere . . . and discovered Australia. Dick Scritchfield hauled back one of the first '32 Phaetons (definitely the first to be rodded) from "down under." But, although early iron is plentiful in Australia, so are street rodders. As a matter of fact, lately more early Fords have been shipped *from* the U.S. *to* Australia than vice-versa. Other than Canada (where old iron rusts pretty quickly), the only other area of the world that received significant quantities of "American" automobiles was South America.

You may have heard rumors about the surprising numbers of antique autos surviving in those southern climes. To be sure, several of our Brazilian readers have sent photographic proof, which has appeared in our Early Iron and Rodder Mail columns, of old cars that not only exist, but which are still driven as transportation. You see, nobody told these people about designed-in obsolescence or yearly depreciation. There were only so many cars to go around; you paid a bundle to get one in the first place, and you expected it to last a good long time.

But no one had ever brought one of these well-preserved autos back to the

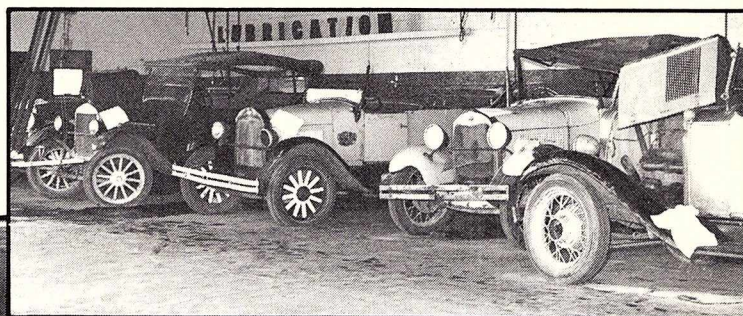
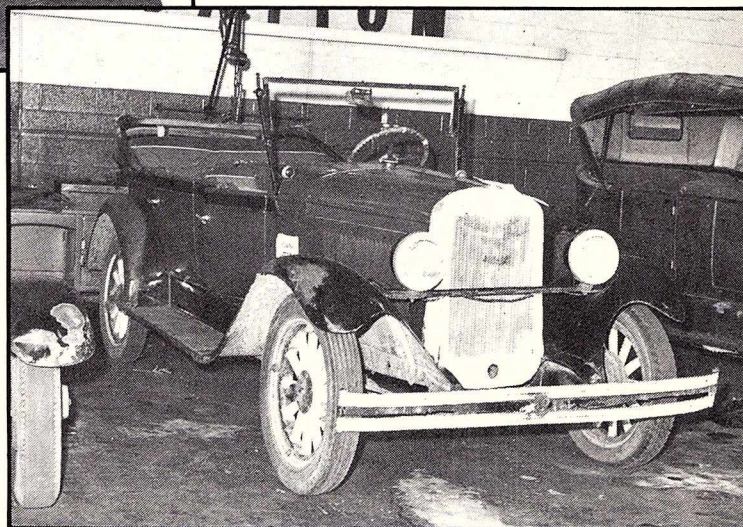
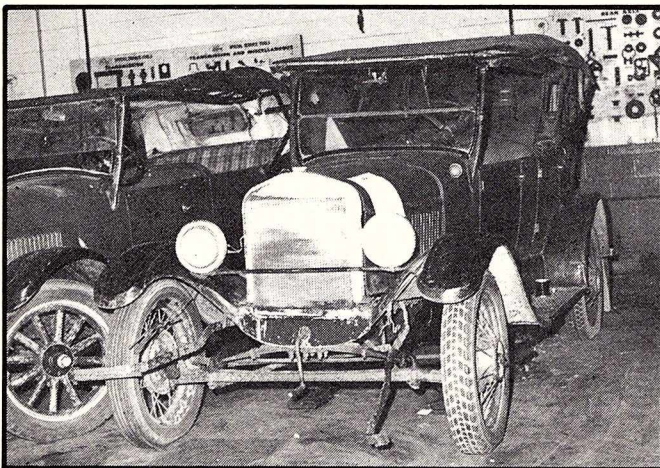




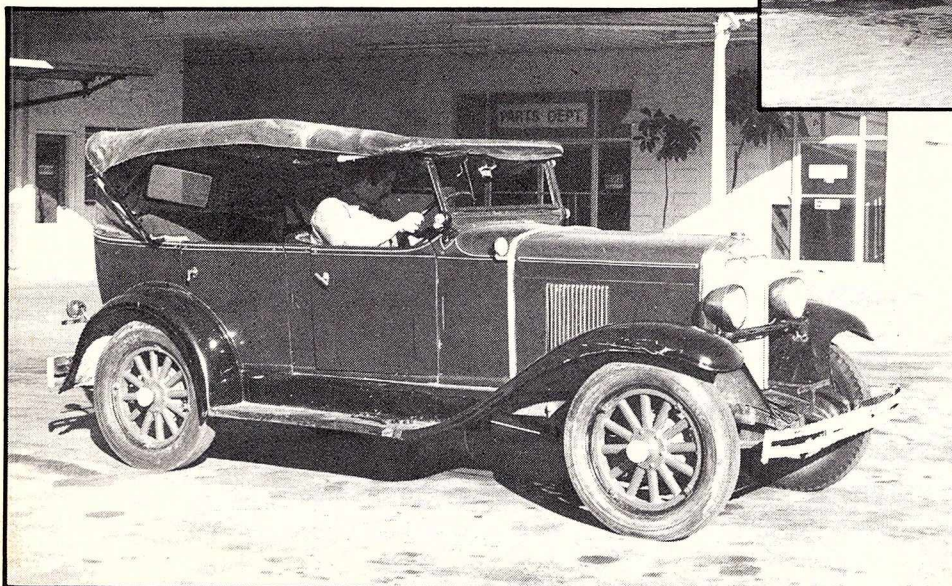
**ABOVE**—They also brought up four '28-'29 Ford Phaetons. This might look rough, but check straight body, upholstery.

**RIGHT**—Nine Chevis are included in first lot of 17 (all touring cars). Cars are super complete (note cowl lights); rust free.

**BELOW**—Nobody will get really excited over T Tourings, but ones as undented and un-rusty as this are rare. Has side curtains.



*Several of this first shipment were damaged or pilfered on the trip up (such as broken top bows). Steve drove the '29 Chevy at left out into yard; ran great. Some have right steering, others left.*



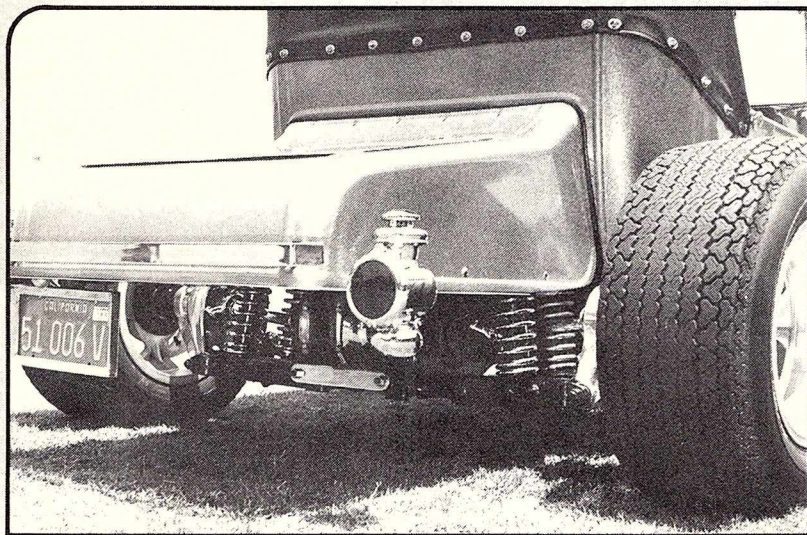
Argentine. Not just by descent . . . she is an Argentine citizen, and a lawyer who is a current member of a firm in the province of Santa Fe. Cristina's father is the past governor of the province, and her brother, by the way, is the Minister of Exportations. Bill thought that he might have enough "pull" to be able to ship some of the excellent local old autos back to the U.S. It wasn't easy. After

*(Continued on page 67)*



# TURTLE-BACK T

It's built like a show car, but it has racked up 20,000 miles so far.

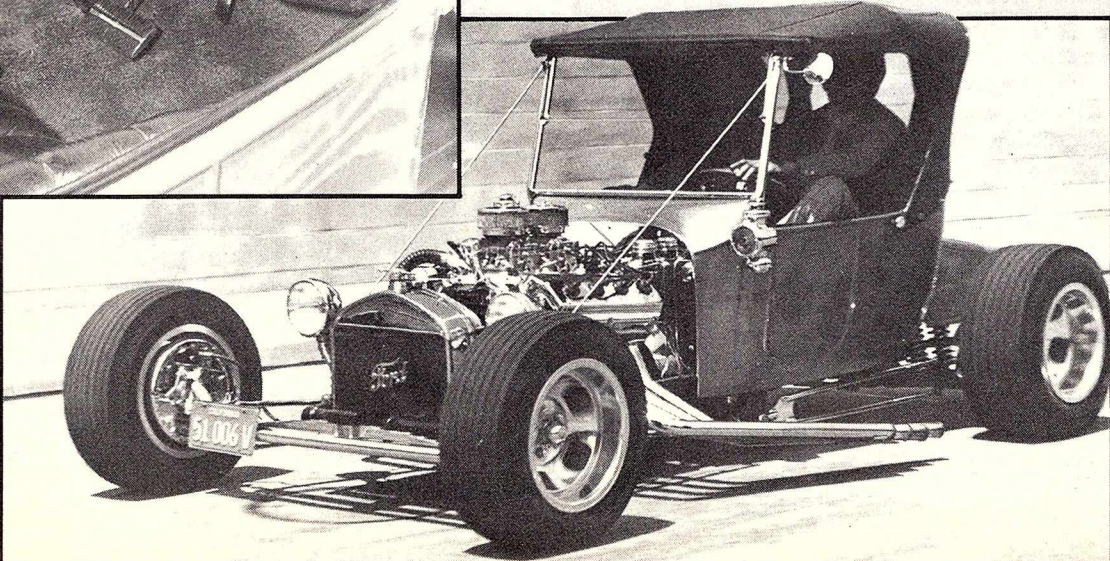
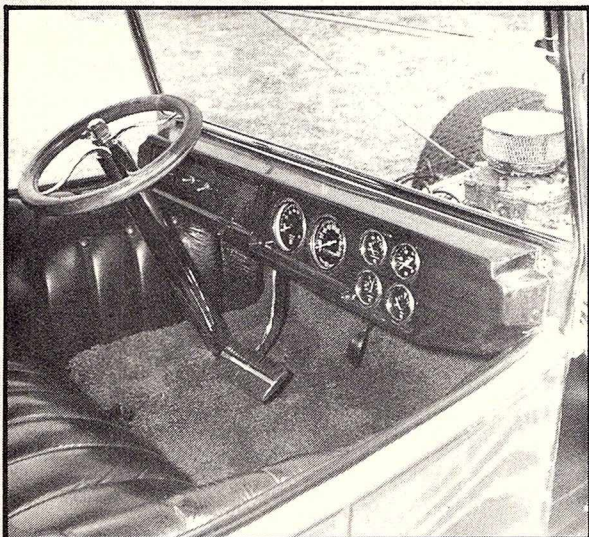
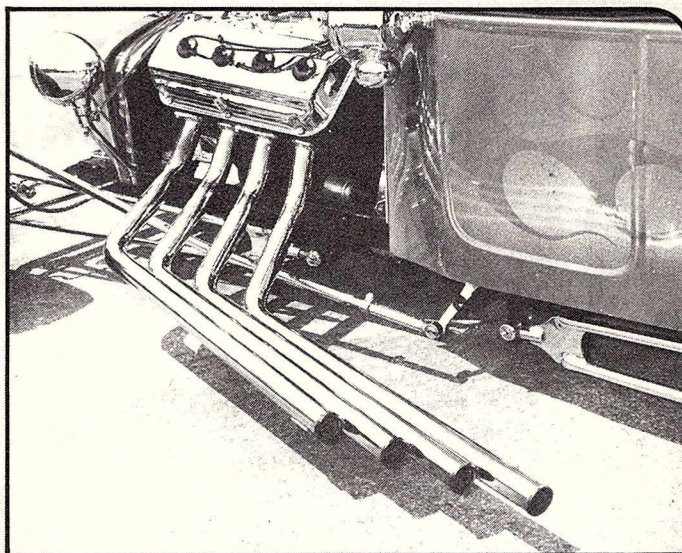
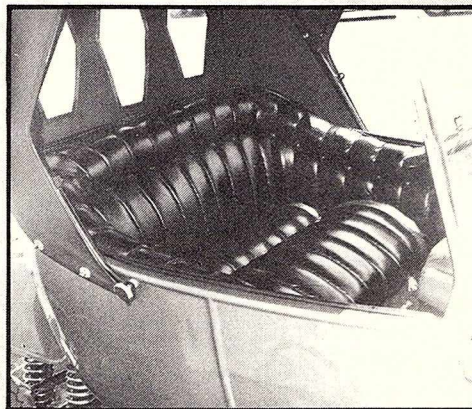


**ABOVE**—Painted and polished Jag rear sits under deck, mounts on custom-built box-tube frame. Note simple bumper to keep nudgers from crunching 'glass.

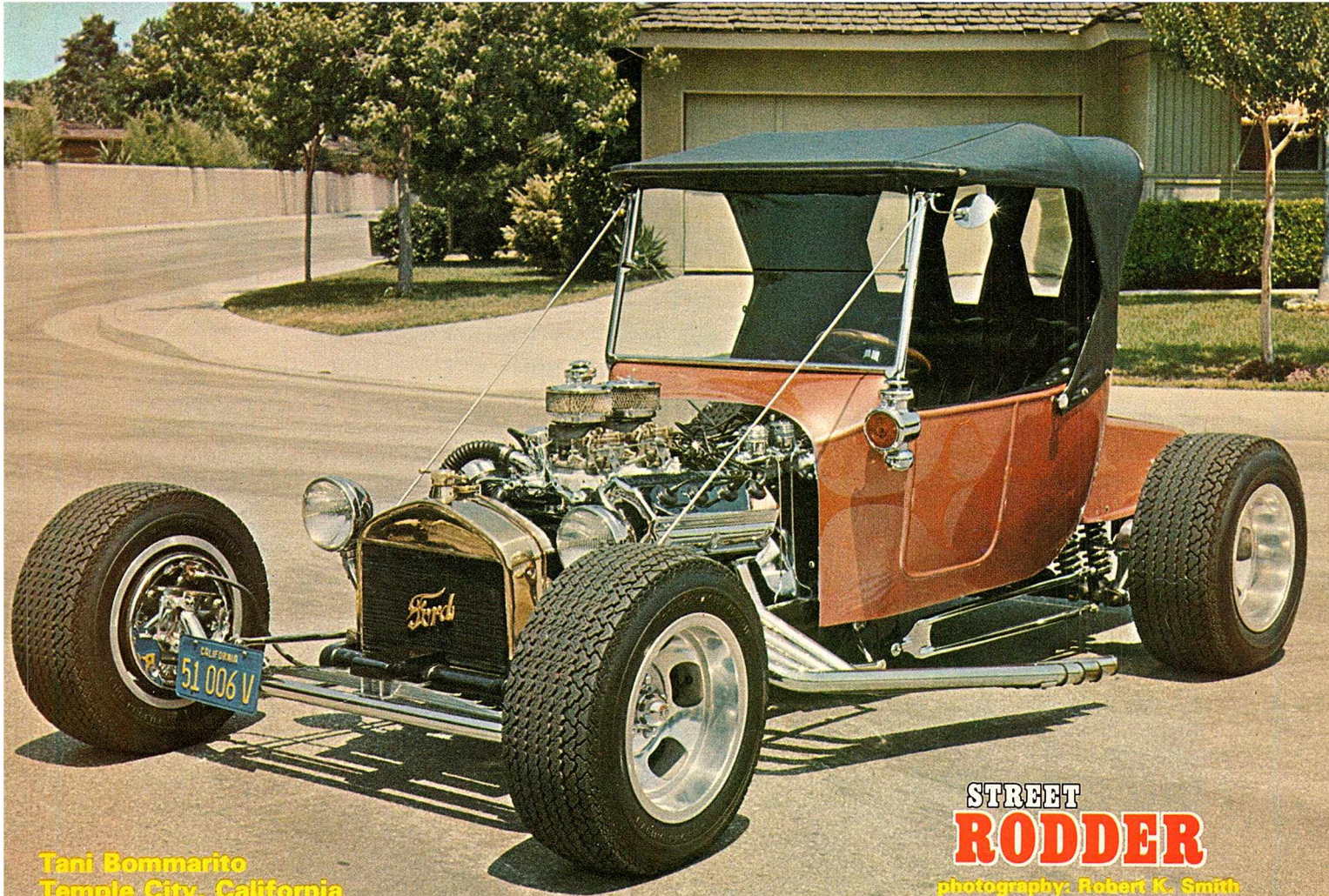
**RIGHT**—Individual chromed exhaust stacks lend early '60's dragster appearance, appropriate to hemi. Built by Pete Grossi, they use 750 Honda baffle inserts.

**BELOW**—Highlight of interior is dash, carved from single piece of mahogany. T wheel mounts on Econoline steering; trans is pushbutton Torque-flite.

**BELOW**—Tasteful interior is actually "TJ" special (it was upholstered in Mexico, where the rates are much cheaper). Note hard to find original top bows.





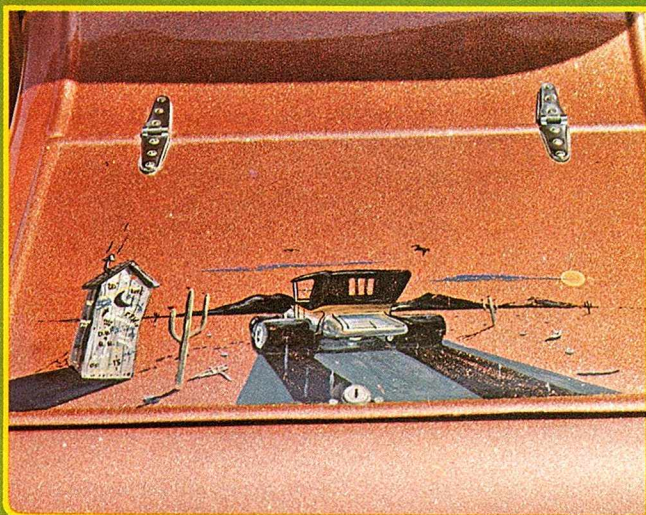


**Tani Bommarito**  
Temple City, California

## STREET RODDER

photography: Robert K. Smith

**A**lthough Tani Bommarito estimates that he has invested \$13,000 in his ground-hugging T-with-a-tail, he nevertheless drives it for daily transportation. If you are going to put that kind of money into a car, you should at least get to enjoy it, right? Tani's pretty wife Gayle does her share of driving, too; she is sitting at right next to the big 392 Chrysler Hemi mill. The engine is basically stock inside, but a Weiand manifold and a pair of Carter four barrels have been bolted on top. Below you see the artwork of Art Fernandez, who applied the orange metal flake paint.





# HYDROGEN EMBRITTLEMENT

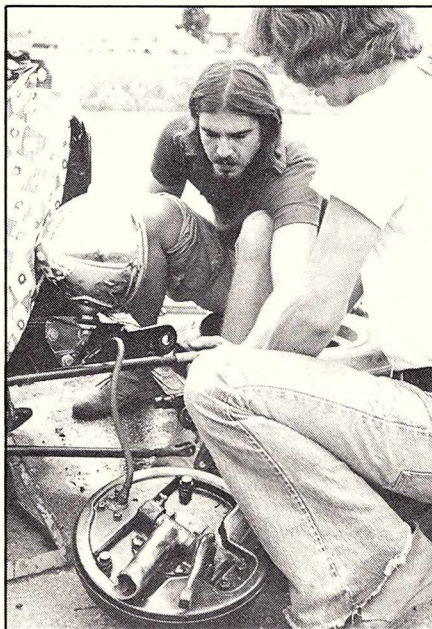
Here are the facts, gathered from aerospace engineers,  
about why chrome plating can cause parts to crack and fail.

Long ago, some forgotten hot rod enthusiast crossed the line into the rich man's world of the custom made automobile and borrowed a feature which in time became a fad — the decorative plating of otherwise functional components. Chromium plating as we know it first appeared on California hot rods before World War II. Eldon Snapp, my elephant-memored historical resource recalls chrome finery on dry lakes roadsters as early as 1938.

Nickel plated bumpers, grille shells and external ornamentation had been standard fare on production automobiles from the very beginning, but by the late 1940's, the chrome plating of engine accessories, interior hardware and undercarriage components on street rods and "customized" cars had become a commonly accepted and highly prized modification.

The early fifties ushered in the "Rod and Custom" auto show and these ex-

by Frank Oddo



chrome plating. True, the preponderance of plated objects are brackets, accessories, and the like, but many rods still sport chromed front axles, springs, and spindles.

In an earlier review of chrome plating (Sept., 1974) we pointed out the metallurgical fact of hydrogen embrittlement because we felt you should be aware of it. It is not our purpose in the present article to alarm our readers nor bore them with theoretical concepts. It has always been *Street Rodder's* policy to avoid supra-technical quagmires and evangelical dissertations. But on the other hand, a magazine worth reading should disseminate relevant information. Otherwise it is just another picture book.

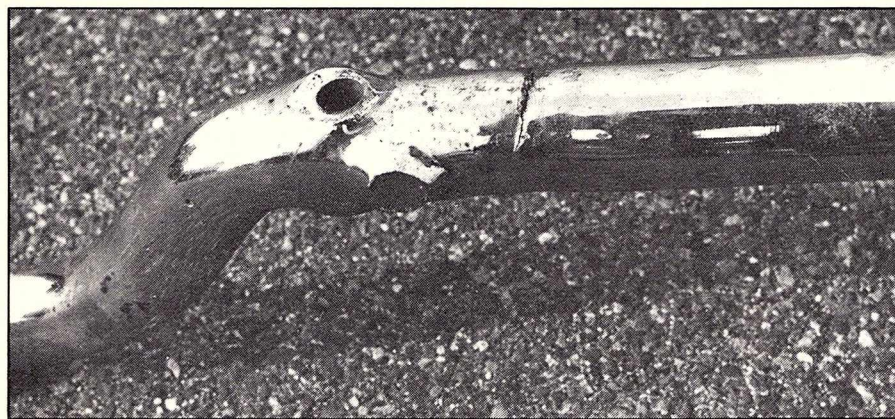
With that in mind, bear with us through the following; give the facts presented some interpretive thought, and draw your own conclusions as you see fit.

\* \* \* \* \*

"A hydrogen embrittlement failure is a catastrophic\* thing. Pow! The part goes . . . I've seen aircraft-grade steel bolts four inches in diameter shear right in half . . . [Hydrogen embrittlement] can occur in a part with a wall three inches thick if you have a sufficient quantity of hydrogen disrupting the molecular structure of the metal. Hydrogen embrittlement won't occur unless the part is loaded, but under experimental conditions . . . we've had internally loaded test bands with .250" wall explode *during* plating!" (note 1)

The man talking is not one given to sensational, unfounded statements. He is Bill Snyder, the Quality Control Manager of one of the largest military and civilian electroplating companies in Southern California — Embee Plating. Bill's job is a critical one, for the quality of thousands of parts and ultimately the safety of human beings is entrusted to his scrutiny. So when he talks, we listen. We were also particularly fortunate that

*\*In this sense, "catastrophic" refers to a sudden and violent event.*



travaganzas placed an even greater emphasis on decorative plating. Exhibitors now competed with each other to find new and unique components to dip in the electro-plater's cauldrons.

By 1955, a visitor to one of the "Autoramas" frequently found himself looking into mirrors strategically placed on the floor beneath the cars. After all, this was the only way he could appreciate chromed exhaust pipes, frames and so on, *ad nauseum*. I suspect that if some inventor had come up with a method for making chrome stick to

*ABOVE—Without a metallurgical examination we couldn't say for certain that hydrogen embrittlement caused this crack. But, embrittlement is more likely to occur with chrome than types of less dense plating.*

rubber, you'd have heard the grind of metal against concrete as exhibitors pushed in "Kustoms" on chrome tires.

The restrictions of physical chemistry aside, the laws of economics and common sense kept most hot rodders a little more conservative. Nonetheless, anyone paying attention to the cars at current street events will note a great deal of



Boeing Aircraft Company was willing to release the latest research available on hydrogen embrittlement. We shall generously quote from their data.

Let's start with a definition of embrittlement from the standpoint of an electroplating process problem: "Hydrogen embrittlement is the catastrophic, hydrogen-induced brittle fracture of high strength structural steels at relatively low applied stresses." It is not some concept dreamed up by metallurgical theoreticians. It is a real problem that can, and does, cause stress cracking of electroplated steel parts. (note 2)

Hydrogen embrittlement does not occur randomly across the board in all

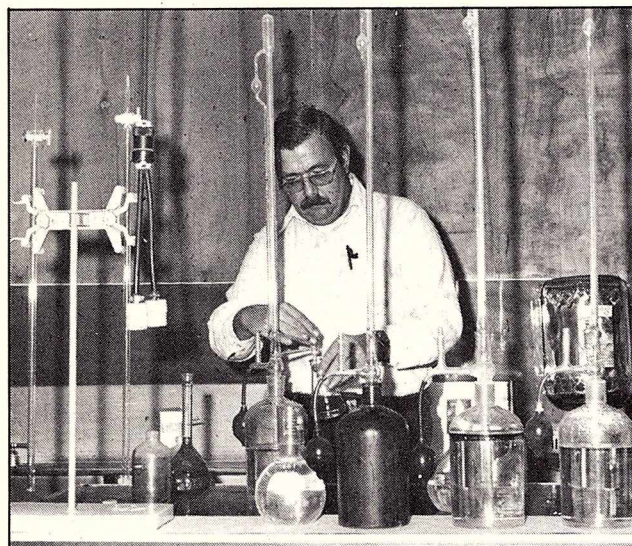
concentrate at the surface of the part. If the hydrogen cannot escape, as in the case where the plating holds it captive, it will eventually diffuse to low hydrogen areas until all areas of the steel are in equilibrium.

"Now if a stress is applied to the steel, there results new forces which tend to redistribute the hydrogen." Just exactly how hydrogen causes a crack is still debated by metallurgists, but it is known that the moving hydrogen molecules will progress toward the point of highest stress. When enough hydrogen accumulates, it somehow weakens the internal bonding of the steel and a crack is started. "The high stress, and consequently the hydrogen, now moves to the

moly") are more susceptible than other alloys. The various grades of so-called stainless steels (corrosion resistant chromiumnickel alloys: 17-4 PH, AM-355, AISI 410) run a close second.

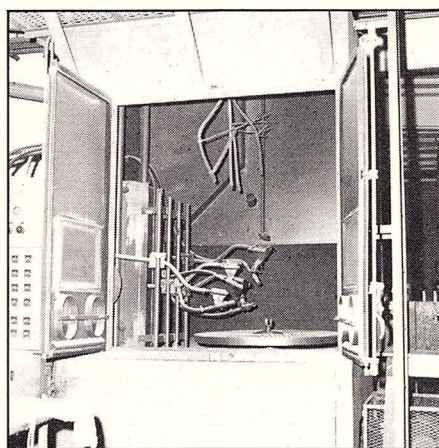
This is one of the most interesting facets of hydrogen embrittlement — high strength steel is more susceptible than low strength steel when above a "critical stress level."

"The steel must be subjected to an applied stress above some minimum value that is dependent on the strength of the steel . . . the lower the strength level of the steel, the higher is this minimum stress. For example, if a part full of hydrogen was loaded to 20,000 psi, it would not be expected to fail if its



ABOVE—Bill Snyder must maintain a surveillance of the electroplating solution in order to ensure its composition is such that hydrogen embrittlement is avoided or at least reduced.

RIGHT—Military and aircraft specifications require shot peening of many parts prior to chrome plating to relieve residual stresses. Tiny shot is air blasted against such parts at Embee Plating.



plated metals. Rather, several conditions must exist: A susceptible material is required — most typically steel that has been heat treated to some relatively high level. The greater the tensile strength of a given grade of steel, the greater the potential for hydrogen-stress cracking. (Tensile strength or ultimate strength is the greatest longitudinal stress, or pull, a material can undergo before it tears apart.) This potential for failure is particularly great when the steel is subjected to a static stress.

Secondly, the steel must contain an excess of hydrogen diffused throughout its molecular structure. And this is the crux of the problem, for the electroplating process introduces hydrogen into steel. Once in, the hydrogen will usually

crack tip and the process continues until the steel can no longer withstand a crack of the size generated, and complete fracture takes place." (note 2)

It has been learned that low alloy steels (LAS), those containing minor quantities of alloying elements other than the commonly accepted percentages of carbon, manganese, silicon, sulfur and phosphorous, such as 4340 LAS (chromium-nickel-molybdenum alloy) and 4130 LAS (chromium-molybdenum alloy — known to rodders as "chrome-

TABLE I			
ALLOY/TEMPER HYDROGEN EMBRITTLEMENT SUSCEPTIBILITY			
	ALLOY		TENSILE STRENGTH (psi)
Most Susceptible	Group 1	AISI 4340 (LAS)	280,000
		AISI 4130 (LAS)	180,000
	Group 2	AISI H-11 (LAS)	260,000
		17-4 PH (CRES)	200,000
	Group 3	AM-355 (CRES)	180,000
		AISI 410 (CRES)	160,000
		18 Ni Maraging (LAS)	260,000
		AISI E8740 (LAS)	180,000
	Group 4	17-7PH CRES	200,000
	Least Susceptible Group 5	Alloy 718 (Nickel Alloy)	180,000
		Waspaloy (Nickel Alloy)	190,000
		Rene' 41 (Nickel Alloy)	200,000
		U - 212 (CRES)	180,000

LAS = Low Alloy Steel ● AISI = American Iron and Steel Institute  
CRES = Corrosion Resistant Steel ● PH = Precipitation Hardening

strength level was below 230,000 psi, but it would fail if its strength level was over that." (note 2) It is the percent of tensile strength that is critical.

As pointed out above, the very nature of the electroplating process introduces hydrogen into the part. But there are two kinds of hydrogen in the plating bath, molecular hydrogen (H<sub>2</sub>) which forms into the gas bubbles one can see escaping in the solution, and atomic hydrogen (H) which is adsorbed from the plating solution onto the surface of the basis metal. It is the atomic hydrogen which ultimately penetrates the metal and causes embrittlement.

Once atomic hydrogen has entered the steel, it is diffused within it as a result of the driving force of the aforementioned concentration gradient or the stress gradient. The composition of the steel, its crystal structure, and the standing temperature determines the rate at which the hydrogen moves.

The conscientious electroplater is now confronted with the problem of removing the atomic hydrogen from the part after plating. Primarily, this requires baking the part in an oven; but the new-



ly applied plating must be porous enough to permit the escape of the hydrogen during bakeout. Heating the part increases the rate of diffusion and the atomic hydrogen is driven out due to the concentration gradient at the surface of the part.

Military plating specifications for the baking of various types of electroplating are quite clear, and many specs require that the part be in the oven within an hour of the time that it leaves the plating tank.

Cadmium plated parts with hardness greater than Rockwell C 40 must be stress relieved before cleaning and plating. (Stress relieving is the process of heating to a suitable temperature, holding the heat long enough to reduce residual stresses, then cooling slowly enough to minimize the development of new residual stresses. Residual stresses are those present in a body that is free of external forces.) Parts subject to flexure (springs, etc.) and all those over Rc-40 hardness must be given a 375 degree, plus or minus 25 degrees, Fahrenheit post-plating bake.

All steel parts with a hardness of Rc-40 or greater that are to be either zinc or nickel plated must also be baked to the cad specs, but parts having a tensile strength of 220,000 psi or greater are rarely permitted nickel plating at all.

Our major concern, though, is decorative chrome plating (usually over copper and nickel undercoats). Some parts to be chrome plated (depending on their usage) must be shot peened before plating, but all chrome plated parts (except those below Rockwell C 40 subject *only* to low static loads or *only* designed for limited life under dynamic loads)

require a post bake at 375 degrees, plus or minus 25 degrees, Fahrenheit for three hours. And remember, within one hour of removal from the plating tank. (note 3)

This brings us to the critical question as to whether or not the applied plating on the surface of the part is porous enough to allow the atomic hydrogen to escape during the baking process. Porosity is relatively easy to obtain in cadmium plating, but the major obstacle with respect to releasing the hydrogen in decorative plating is the fact that this very dense plating acts as an intact shield (there are no holes, so to speak) so that when the part is baked, the hydrogen isn't released. And because there is no place for it to go, it will in fact penetrate into the molecular structure of the part even better!

As if this isn't discouraging enough, when the hydrogen embrittlement is relieved in decorative plating, the heat and baking duration will frequently discolor the plating, thereby nullifying the very reason for chrome plating in the first place.

Aerospace electroplaters have elaborate methods to avoid or reduce hydrogen embrittlement. First they retard the formation of hydrogen by introducing additives such as excess hydrogen peroxide into the plating solution. (This combines with the adsorbed atomic hydrogen to form water.) And, because it is known that the higher the current density, the greater the surface area covered with adsorbed hydrogen, current density is kept at a minimum.

Finally, agitation of the plating solution will help release the bubbles of molecular hydrogen and make room for

the formulation of more molecular hydrogen from atomic hydrogen. It also encourages a heavier deposit of the plating metal.

The aerospace industry has employed several tests as an indirect measure of plating porosity in an attempt to verify the effectiveness of the baking process. The most common mechanical evaluation is the static notched tensile test. This test uses specimen bars of steel, equivalent to the alloy of the part to be plated, with a notch machined in the center. Some of them are broken to obtain a reasonable estimate of ultimate tensile value — that point at which the specimen will pull apart. Then the remaining bars are plated and baked along with the true parts. Following this, the test bars are loaded to 75% of ultimate tensile value for 200 hours. If at any time during that period one breaks, it has to be assumed that hydrogen embrittlement is evident in the true parts. All of the parts must then be recalled as defective. (note 1)

Obviously such time consuming quality control had to generate new methods of analysis, and Boeing Aircraft subsequently developed an electronic device which more directly measures the porosity of titanium-cadmium plating, one of the most common in aircraft use for corrosion resistance. Called the Plating Porosity Meter, it quickly and accurately determines if the plating is

# HYDROGEN EMBRITTLEMENT

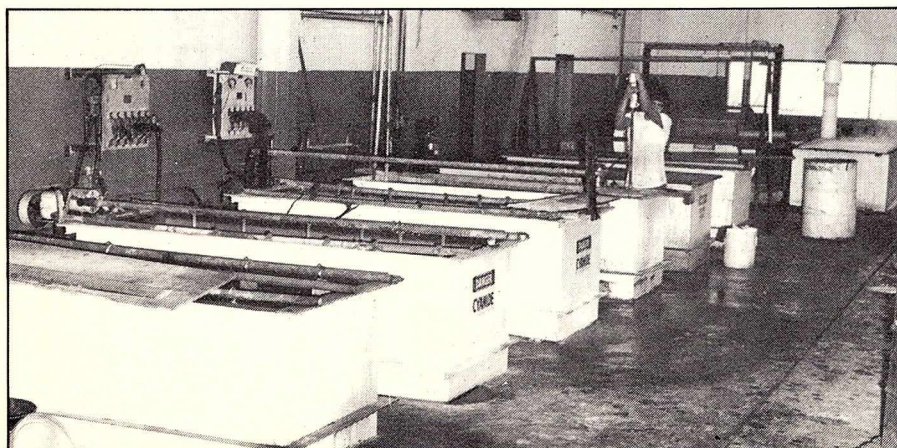


Table II

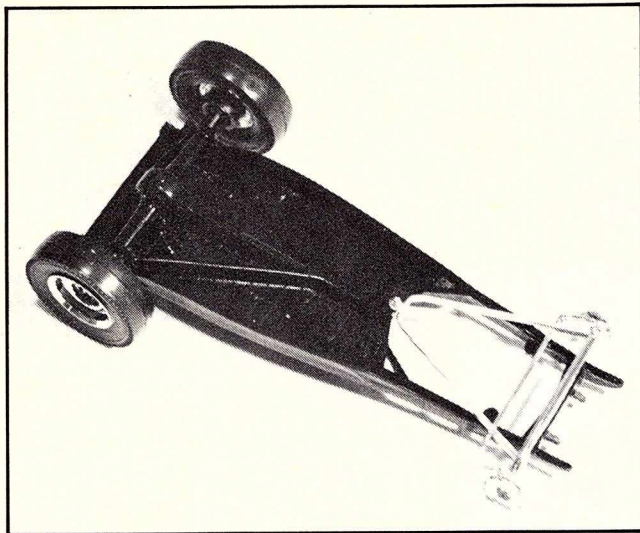
Typical Steels Used In The  
Manufacture of Selected  
Automotive Components

Part	AISI Number
Motor Mounts	1000
Bumpers	1000
Backing Plates	1020
Bumper Brackets	1040
Suspension Leaf Springs	1070, 1095
Hood Return Springs	1095
Fans, Pulleys, Generator Brackets	1100
Suspension Shackles	1100
Suspension Coil Springs	1090 or 1360
Rear Axle Housings	1320
Front Axles, Pitman Arms, Spindles	1340-1350

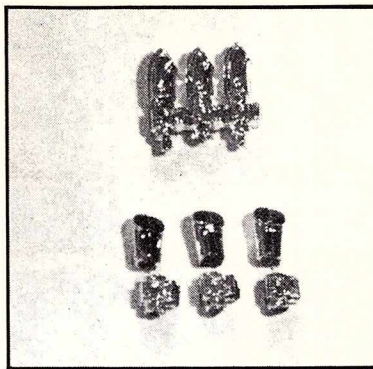
(Reference #5)

*LEFT—Embee does just about every type of electroplating required by industry...except decorative chrome. The latest in sophisticated quality control methods are routinely employed.*



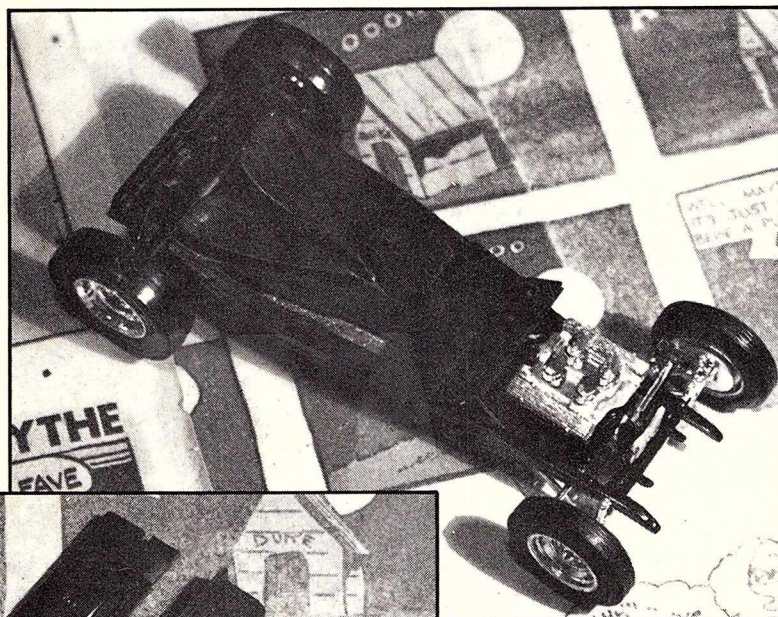
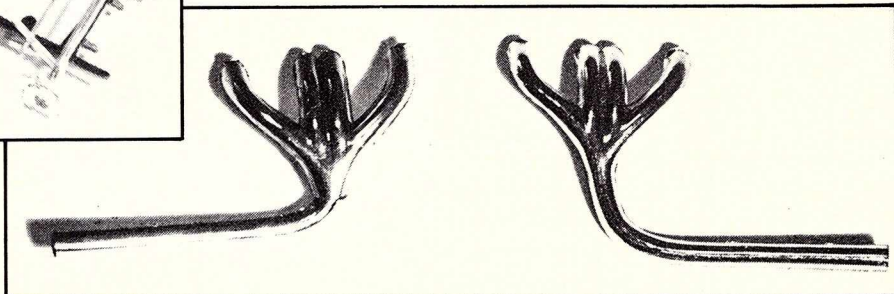


ABOVE—The AMT chassis has had molded-in muffler and pipe cut off, section covered with paper. Front end is from Monogram '34 coupe (as is tie rod), wishbone is from AMT kit, cut to fit. Rear wheels and slicks also are AMT '32.

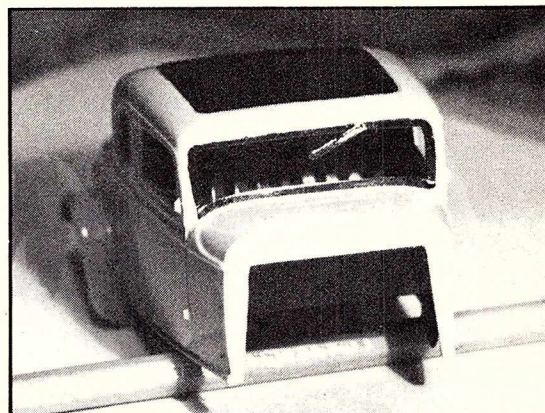


LEFT—AMT '32 carbs are cut apart with razor saw, air horns cut off. Glue bottoms to manifold. Cut each air horn down about 1/16 inch, and glue to carb at proper angle.

BELOW—I chose AMT headers because they looked close to real ones; found they had to be shortened to look right. To be exact, you could form 4-pipe headers to fit, instead.



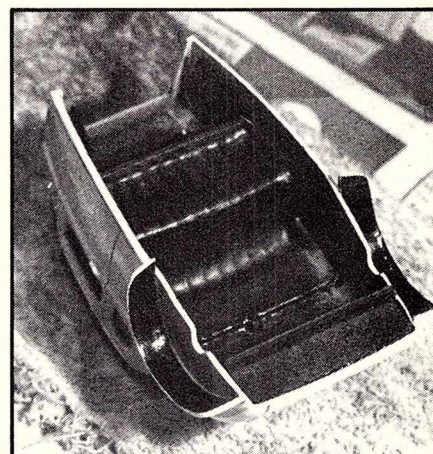
LEFT—Front wheels are from Ala-Kart. Floorboard piece from AMT kit is glued to frame, to make front support for body.



ABOVE—A piece of flat plastic was cut to fit in firewall opening, the bottom of which will glue to top edge of floorboard piece.



LEFT—I cut a piece (middle) from floorboard of Monogram '30 Touring to make rear body mounting flange.



ABOVE—The piece glues into the back of the body, and right angle lip fits over back edge of frame. Glue body to frame.

interior "as is" since it was close enough to the Graffiti coupe's. If you would like to detail the interior, I would suggest cutting one of the doors open (and also perhaps the trunk) to allow your handiwork to show and to lend further realism. For the top insert I cut a piece of very thin black vinyl to the proper shape and attached it with white glue.

With body, engine, grille, front end, wheels, and headers in place, all that

was left were details. Underneath, I added mufflers from Monogram's '30 Touring, cut to fit, and then I rummaged through lots of pieces of plastic trying to find ones with the proper bends to connect header to muffler. The ones I finally used came from the headers from MPC's '32 kit. The rear radius rods came from one of those little parts kits ("Chassis Components") that Revell used to sell, but many models include similar links; cut a small piece of plastic for the mounting tab to the frame.

At the front, I added cycle fenders from the AMT kit, cut to about half their length. The headlights and stands



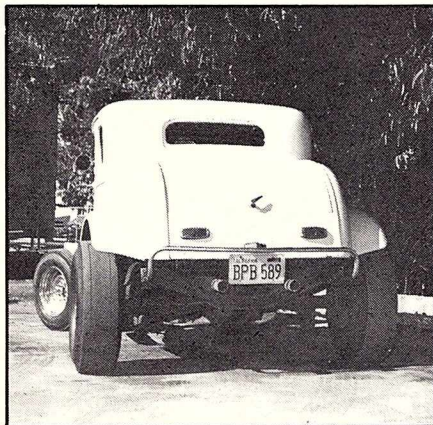
# GRAFFITI COUPE IN Miniature

came from the MPC kit; the buckets are painted to match the body, and the stands are shortened about 1/8 inch (at the bottom). The back of the radiator also came from the MPC kit, cut to fit. The clutch and brake cylinders were cut with a razor saw from the chrome firewall of AMT's old "Ala Kart" kit; and the "chrome firewall" to which they are glued on our deuce is actually a piece of adhesive-backed aluminum foil, cut from a sheet which was included in a Revell mini-kit of interior goodies (that's where the top vinyl came from, too).

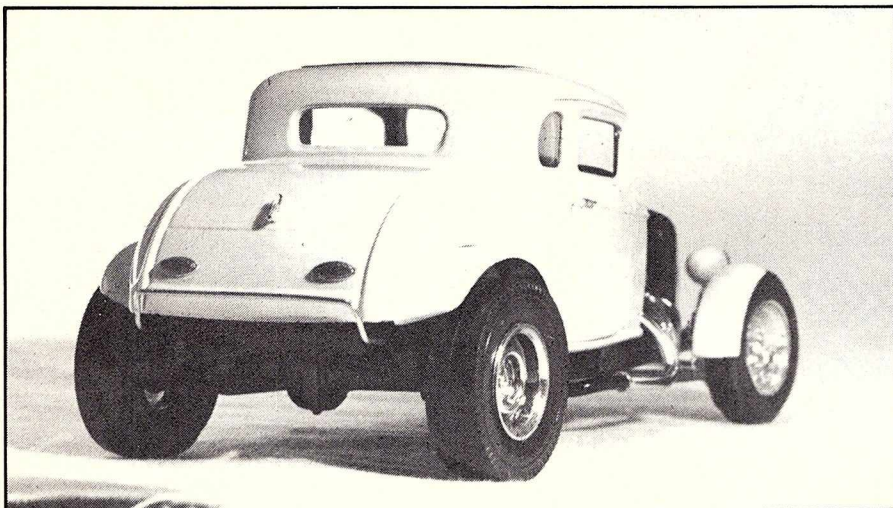
At the other end, I added a pair of taillights from a '49 Ford, which approximate the Chevy units on the actual car. The rear nerf bar was shaped from a straightened paper clip with a pair of

needle-nosed pliers, and then glued to the frame with all-purpose glue (do not use your plastic cement for such pieces). You'll notice that I didn't scrounge up a yellow and black license decal yet, and my tail pipes are not quite like the original's — I think they are ugly (come on, a hot rodder has to have a little room for improvisation, right?).

That's just about as far as I got. As I mentioned earlier, you could continue to add details for months . . . things like brake lines, complete chassis wiring, operating door latches, working lights, bouncing springs, etc., etc. Speaking of chassis wiring, I think I'd better put this little critter on the shelf, and get back to work on my other '32.



**LEFT**—Here's a look at the rear of the real car for details. Model's trunk line is short (rumble seat), placing handle too high. Crossmember differs.

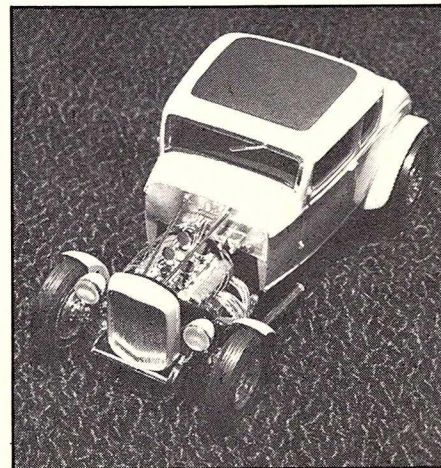
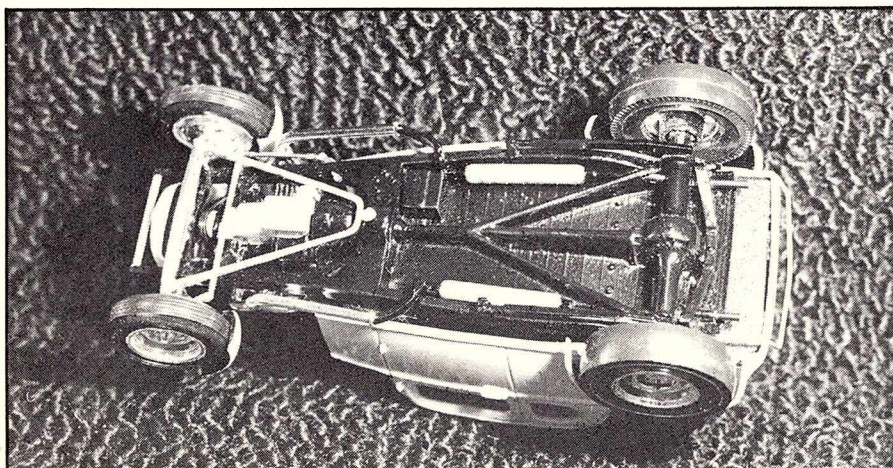
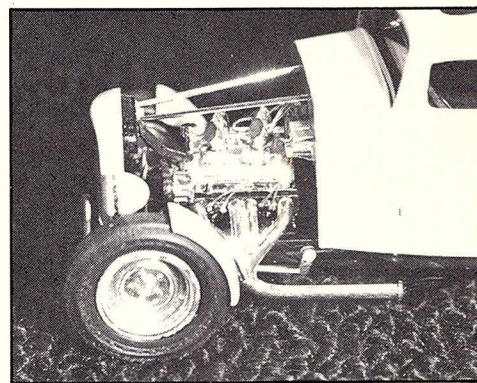
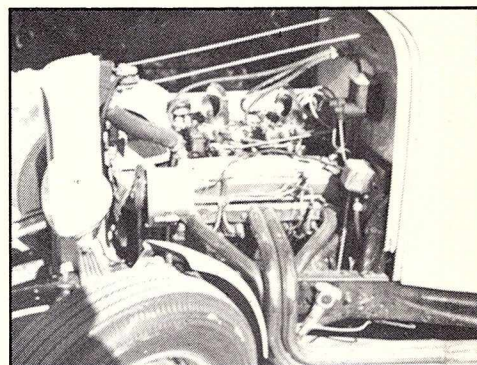


**ABOVE**—Model still needs license. Taillights are from '49 Ford, trunk handle from AMT '29 Roadster, nerf bar fashioned from paper clip.

**BELOW**—Undercarriage detail includes mufflers, pipes, connections to headers. Rear wishbone should really be cut out.

**RIGHT**—Engine got fuel lines, plug wires, hoses, oil filler, alternator. You can study shot of real car's mill for further goodies to include. Radiator supports are chrome plastic.

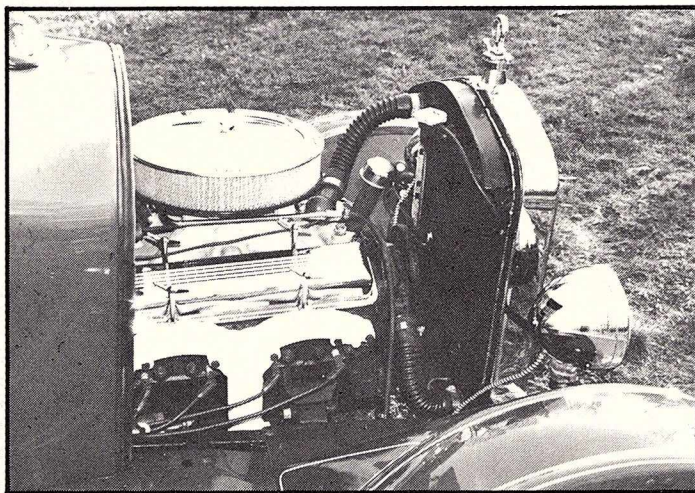
**BELOW RIGHT**—Overhead shot shows piece of thin vinyl cut and glued to top.



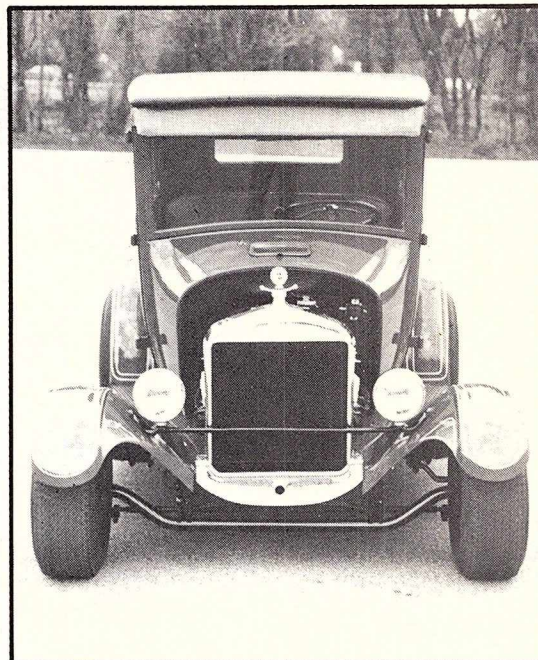
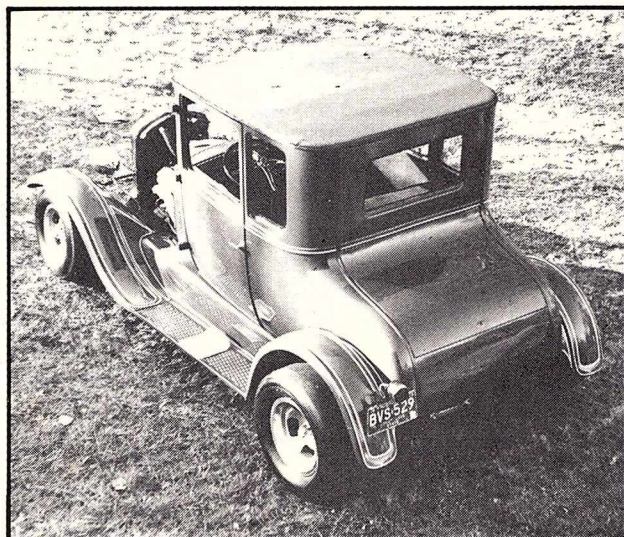


Roger's wife thought it was going to be  
"Florey's Folly," but now . . .

# IT'S AN EYE CATCHER



ABOVE—Clean and simple is the theme throughout. Stock '64 'Vette 327 uses Weiand intake, Holley carb. Walker radiator cools engine and trans.



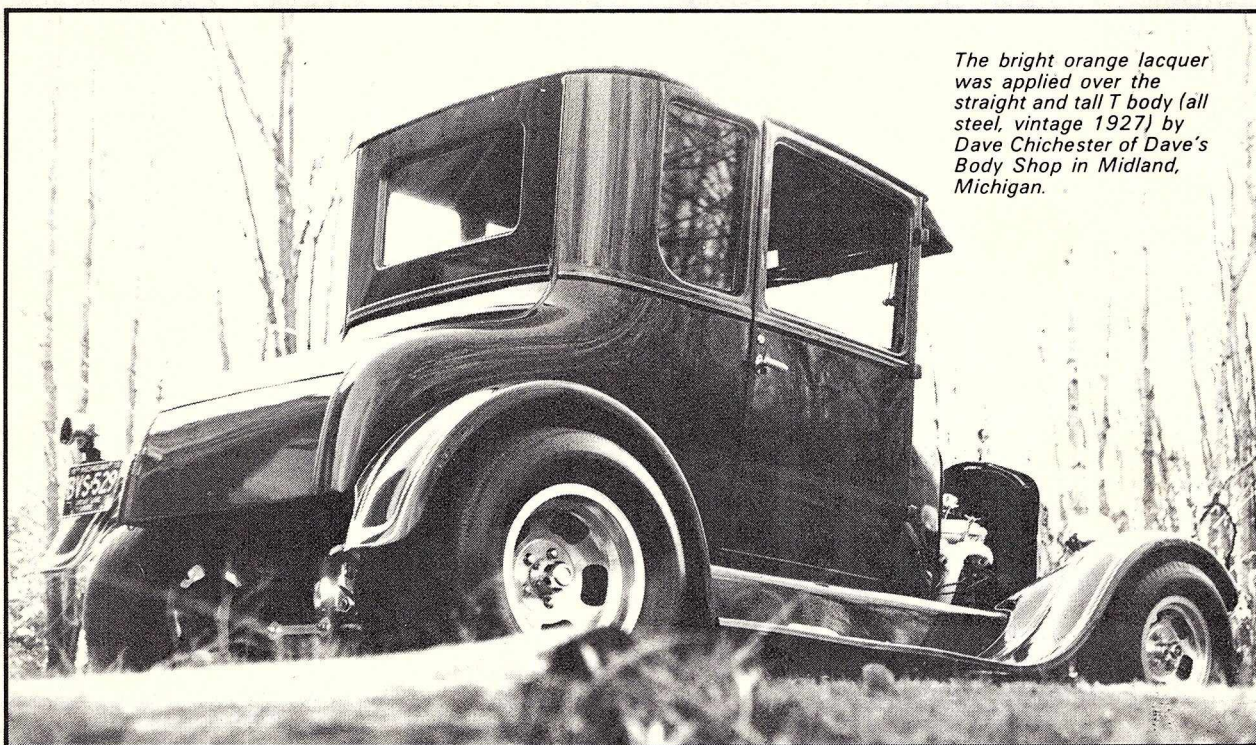
"I acquired the car in June of 1970 by trading a '59 Corvette plus many dollars for it. I was serving in the Navy Sea Bee's at the time, stationed at Fort Hueneme, California. My wife almost hit the roof when she found out I traded the Corvette, which I had just had reupholstered and painted, for a car with no engine, transmission, or many other accessories.

I had made friends with Frank Floyd (a pretty well known chassis builder of the '50's and '60's) and had been helping him work on the chassis for the "T." I was really interested in owning a rod of my own, but just couldn't see how I could afford it on Navy pay. Then one day Frank told me he would make me a deal on the "T" for my Corvette.

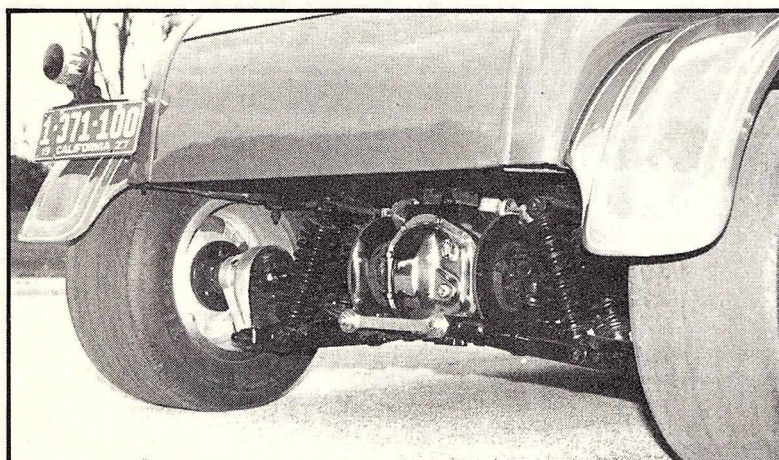
Well, needless to say, I made the trade. My wife needed our other car daily to get to work and back, so I had to go from a Corvette to a bicycle to get back and forth from home to the base. I didn't really mind, though, knowing that some day I would have a real eye catcher of a car. Well, it took about four years to finish the "T," but an eye catcher it is."

TOP—A Ted Brown 3" dropped tube axle and radius rods carry front. Some brakes for this end are needed, though, Rog.



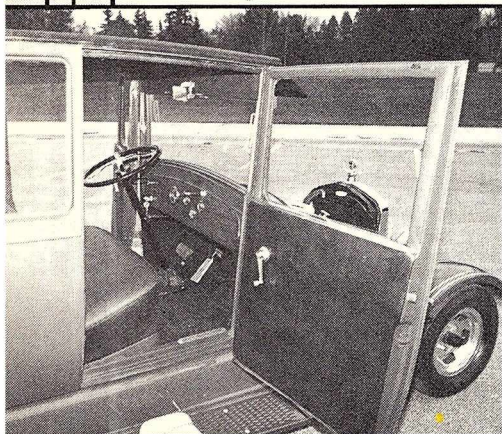


*The bright orange lacquer was applied over the straight and tall T body (all steel, vintage 1927) by Dave Chichester of Dave's Body Shop in Midland, Michigan.*

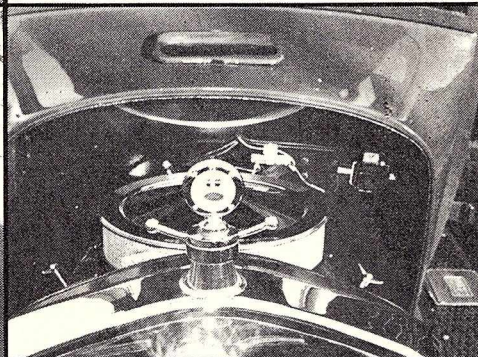


## IT'S AN EYE CATCHER

*LEFT—The only "fancy" part is Jag rear, neatly painted black. Tires all around are Firestone Grand Nationals.*



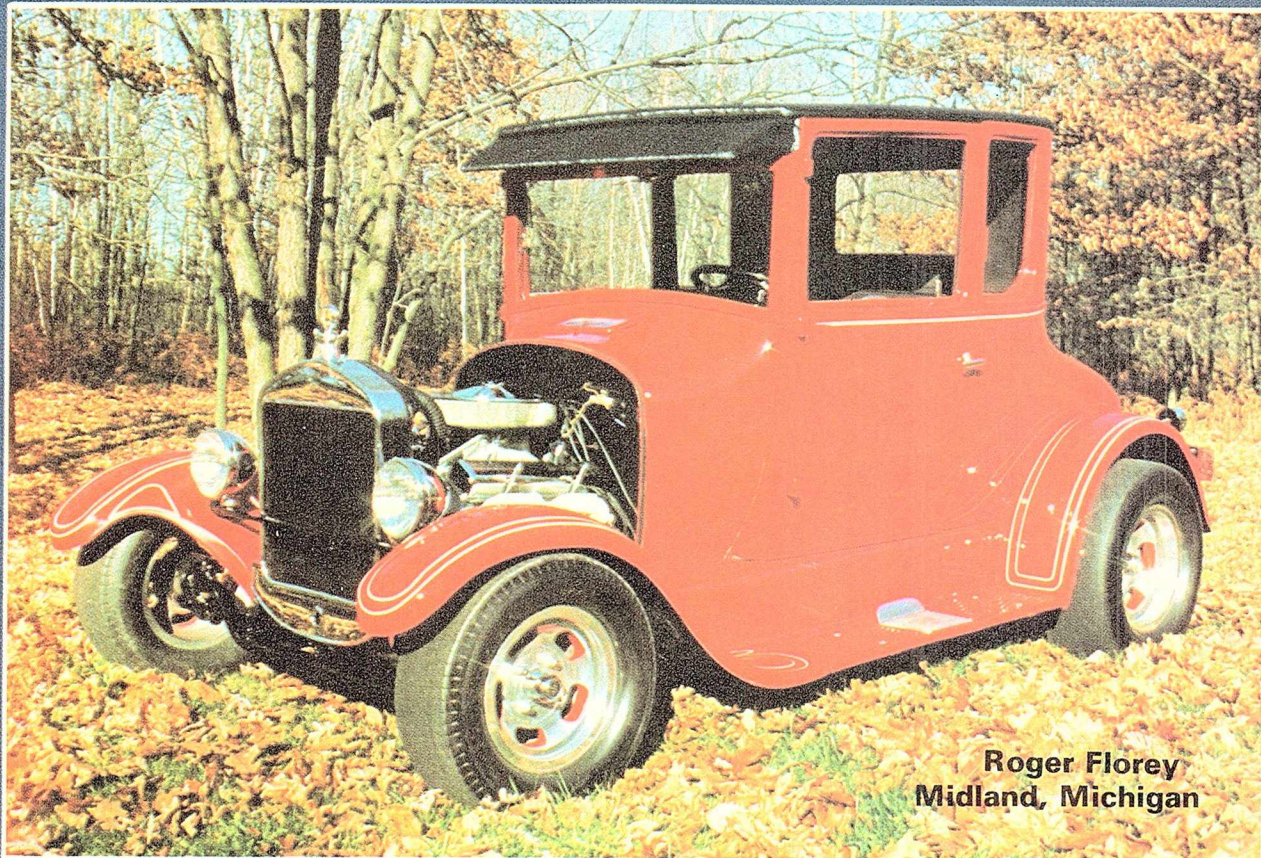
*ABOVE—Seat and door panels wear straight black naugahyde. Roger says headliner is original.*



*ABOVE—"Dogbone" cap mounts on replated shell. Note mural on cowl vent.*

*LEFT—Stock T column and wheel mount atop reversed Corvair box. S-W gauges mount in solid oak dash panel.*





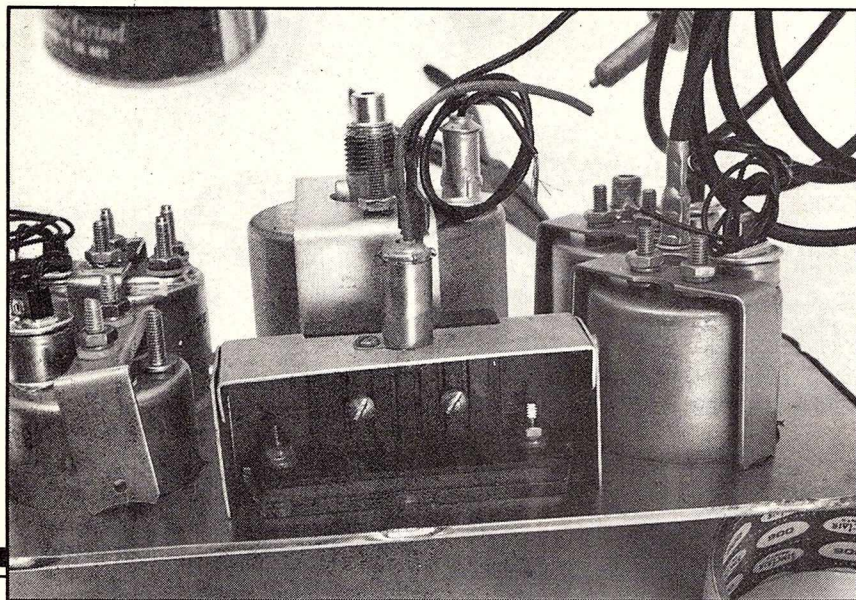
Roger Florey  
Midland, Michigan



photography: Jerry Davis, Jr.




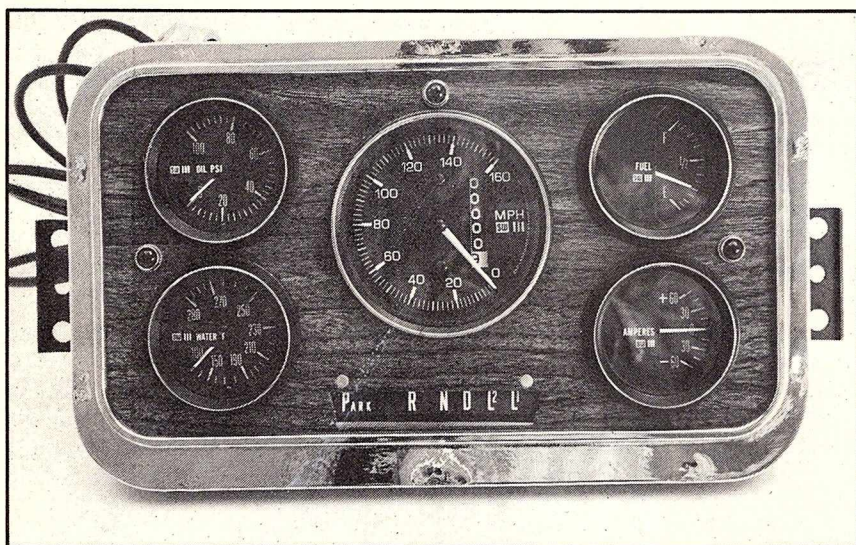
# DASH DOIN'S



corners is to have a second party move a lighted match back and forth under the corner as you work it. This softens the plastic and allows it to stretch slightly for permanent forming. I'd advise experimentation before seriously tackling the job. Once you've perfected the technique, careful layout is the next step. Someone suggested trying a whole dash; I think it would be possible and might even like to try it. Here, however, I'd replace the dry method with the wet: Using a water and liquid detergent solution, the applique material is slid around on its mounting surface, squeegee'd to remove all liquid and bubbles, set aside to dry, and trimmed following the techniques outlined herewith.

One other thing before we move on to the photos and captions: When replacing your stock instruments with custom units of whatever manufacture, be sure you end up positioning them so as to provide a clear, unobstructed view of each gauge. Take into consideration steering wheel spoke placement, eyeball level of both wife and hubby, and individual gauge location. As for the latter, should any gauge require mounting in a place where complete visibility might be ruled out, make sure said gauge is neither of the two commonly thought of as being most critical. Oil Pressure and Temperature. These should be clearly and wholly visible at all times for obvious reasons. As long as you're moving things around, might as well move them to your advantage — and driving comfort. I've driven many rods where gauge placement left much to be desired. All it would have taken in the majority of these cases was planning and forethought.

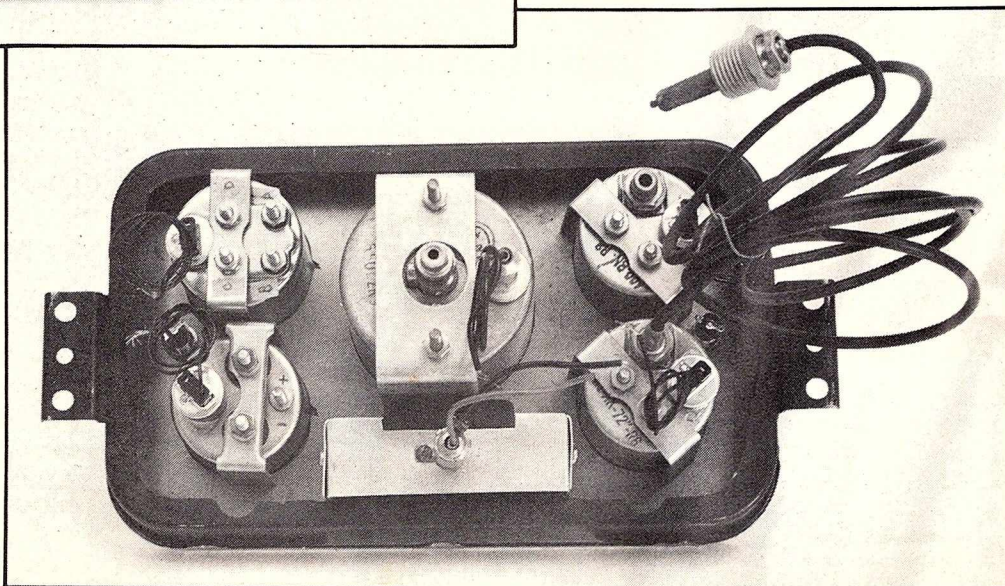
That, after all, is the name of the game. 



**TOP**—Screws which hold gear indicator must be counter-sunk into gauge plate. Since they're flat on front, flats are filed on back ends for holding with pliers.

**ABOVE**—Completed panel with woodgrain face, Stage III gauges, Midget bulb turn and high beam indicator lights, Buick Turbo 400 gear selector dial, and stock '37 Buick bezel and housing.

**RIGHT**—A neat marriage of old and new components. Assembly bolts into place with four studs permanently mounted to dash bracing. Other GM cars are similar.

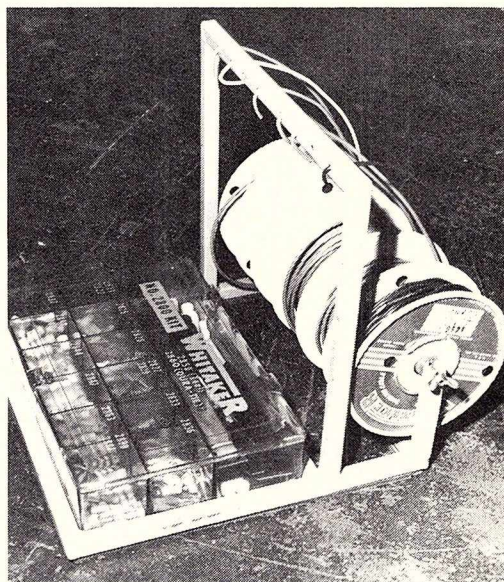




# WIRING HELPER

If you can get your act together like this before even starting, think how the wiring job will turn out!

by Pat Ganahl



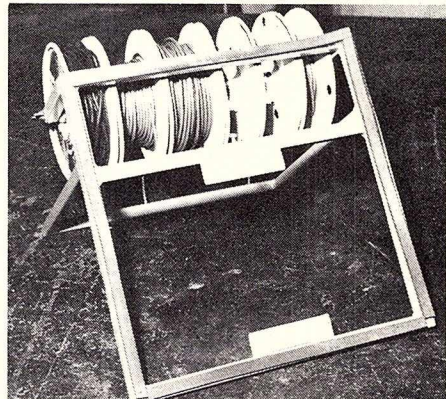
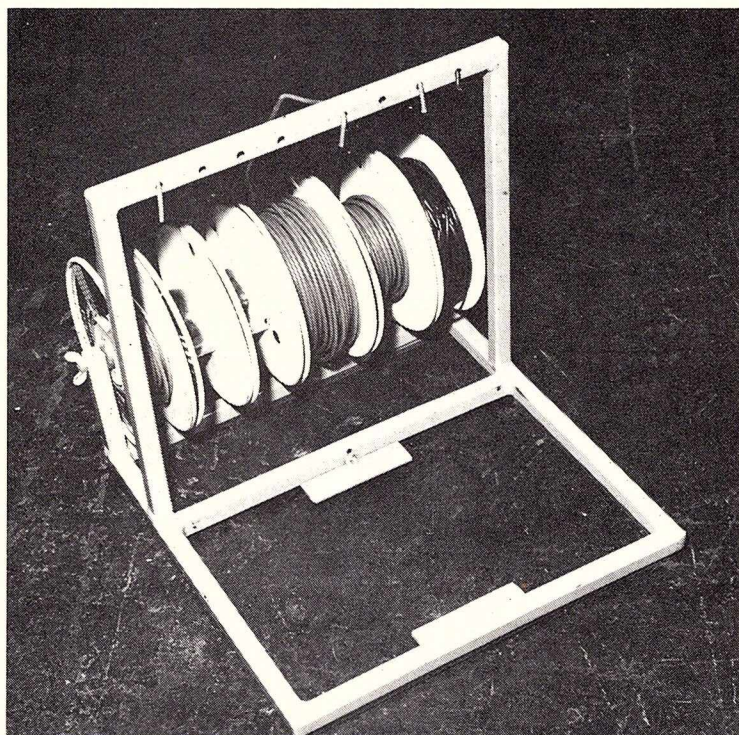
Continuing in our series of helpful hints and trick ideas that we have stumbled across in various shops or garages while pursuing other stories, we present this neat organizer for home wiring artists. The guy who made it is Dave Williams, who operates a Custom Fabrication shop in Placentia, Calif., and he is the type of person who delights in designing little gadgets or gismos to help make his work a little easier or more orderly.

The wire caddy is constructed from

half-inch square tubing, cut and welded to the configuration shown. Measurements are actually determined by the wiring kit you include. Pictured is a Whittaker No. 2800, which affords an ample assortment of terminals, connectors, and clips, plus a combination crimper/stripper pliers, all contained in a compartmentalized plastic case.

This rack will hold up to eight spools of wire, and they are supported on a piece of 3/4 inch plumbing pipe, with a pair of small bolts brazed into the ends.

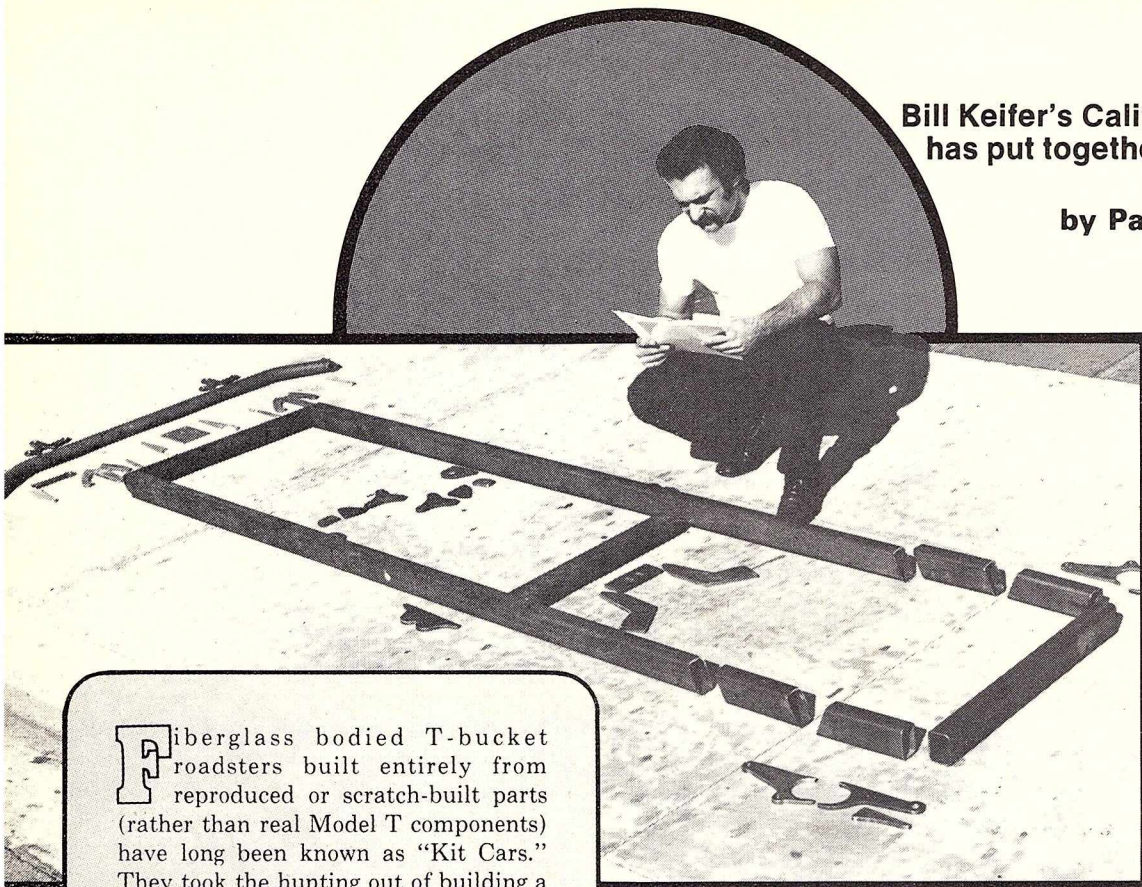
The bolts (or a small threaded rod through the pipe) fit into slots in the tubing, and are secured with wing nuts for easy removal of spools. The wire is threaded through holes drilled in the top crossbar, and the bottom of the rack is fitted with rubber strips to both hold it on a slippery surface and to protect paint should it be set on a fender. Pretty nifty, huh? Makes color-coding a new wiring system a snap. Keep watching for more helpful hints in the months to come, we're building up a good file of them.





## Bill Keifer's California Custom Roadster has put together the complete package.

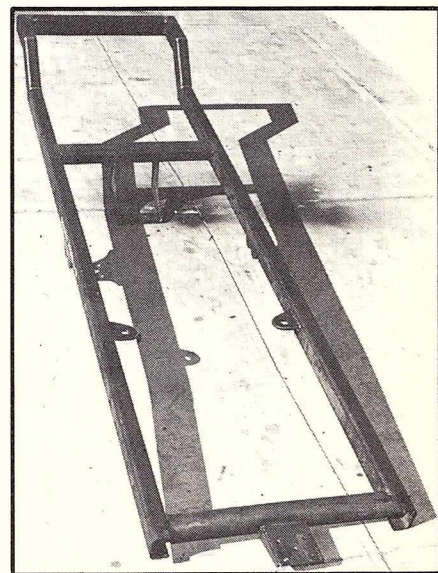
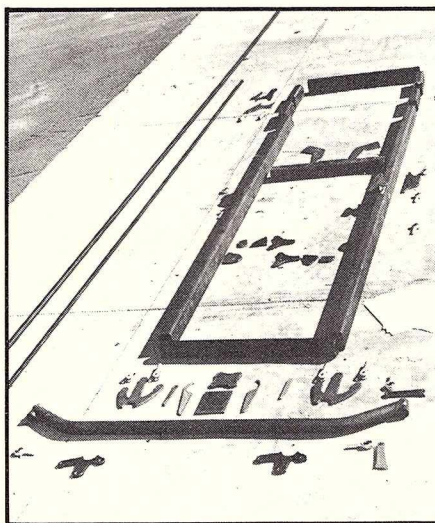
by Pat Ganahl



*LEFT and BELOW—Early Times member Paul Kling studies CCR plans and pre-cut pieces for chassis kit. Detail photo shows parts for both long or short front end (axle assembly comes tack welded), not shown are pre-cut radius rods. BELOW—Or you could buy an already assembled frame, which runs about \$430. Complete chassis kit lists for \$700 - \$800, including axles, springs, etc.*

**F**iberglass bodied T-bucket roadsters built entirely from reproduced or scratch-built parts (rather than real Model T components) have long been known as "Kit Cars." They took the hunting out of building a hot rod. No longer was a real piece of early iron a prerequisite for participation in the rodding sport.

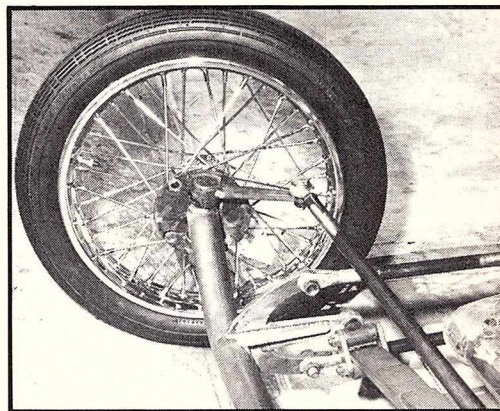
But no one has engineered the Fad T kit concept to quite the extent that Bill Keifer has. Through his California Custom Roadster shop (17454 Clark Ave., Bellflower, CA 90706), you can buy every single piece you would need to construct your own T roadster, short of the upholstery, paint, and drivetrain. And you can purchase these pieces individually; or you can buy them prefabricated. If you're really lazy, rich, or clumsy . . . you could have Bill's shop build the whole car for you. Of if, as we would imagine, you would "rather do it yourself," (and this is the best part) Bill has had complete plans and diagrams printed up that will not only show you exactly how to make and fit together each of the pieces, but even gives you full size patterns for cutting most of the flanges and brackets. In other words, if Fad T's are to your liking, California Custom Roadster has something for each one of you. Write to Bill for a catalog to see just exactly what is available. And if you aren't really interested in Fad cars at all, but you are looking for a good street rod shop to do some work on your coupe, sedan, or whatever, drop by the CCR shop to see what they have going on. They do that sort of stuff, too.



*BELOW—And just to make sure that everything is right, Bill personally street tests every chassis before it's shipped!*

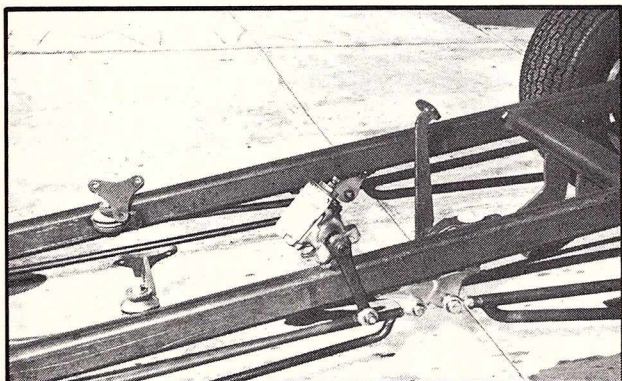


# The "KIT CAR" 'T ROADSTER



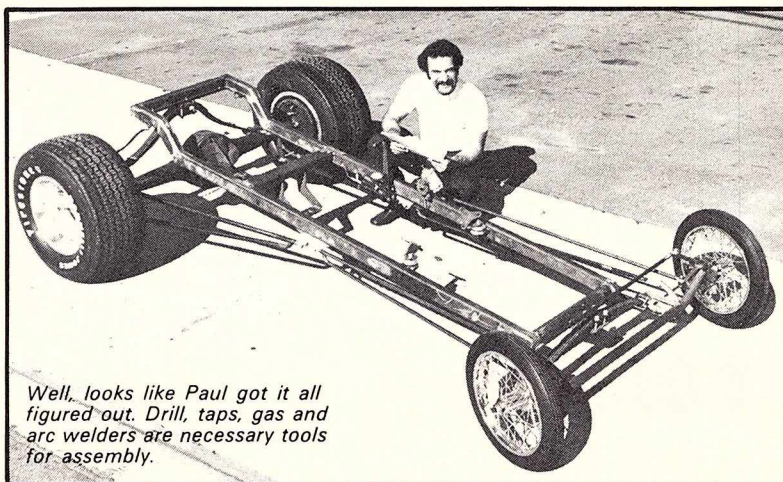
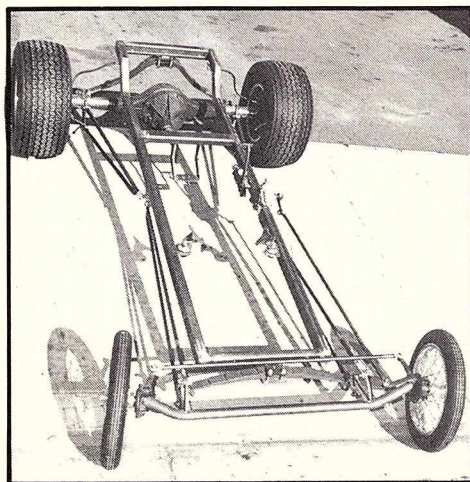
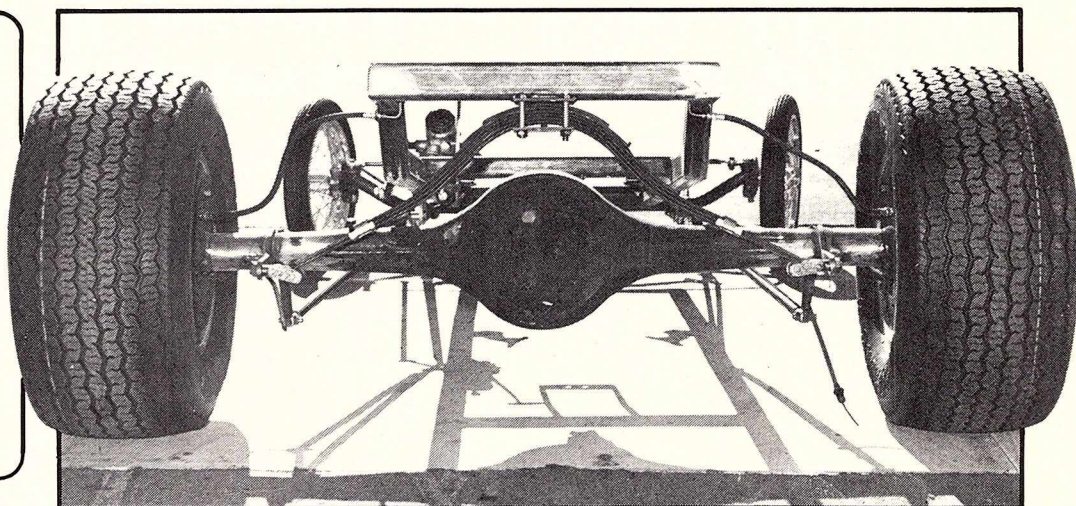
ABOVE—Close look at the "long" front end. Flame cut brackets come spot welded. Springs, clevises, rod ends come in kit. Steering arms weld to Ford spindles.

LEFT—CCR supplies all the extras, too, like reversed Corvair steering, post '58 Chevy motor mounts, brake master cylinder and pedal.



RIGHT—This chassis uses "buggy" type spring and Chevy rear axle. Jag rear mounting set-up is available for same price. Any components, like springs, can be ordered separately.

BELOW—A completely assembled chassis, with tires and wheels, would run around \$1750. Catalog also lists bodies, radiators, headlights, top bows, etc. CCR shop does any type of rod fabrication.



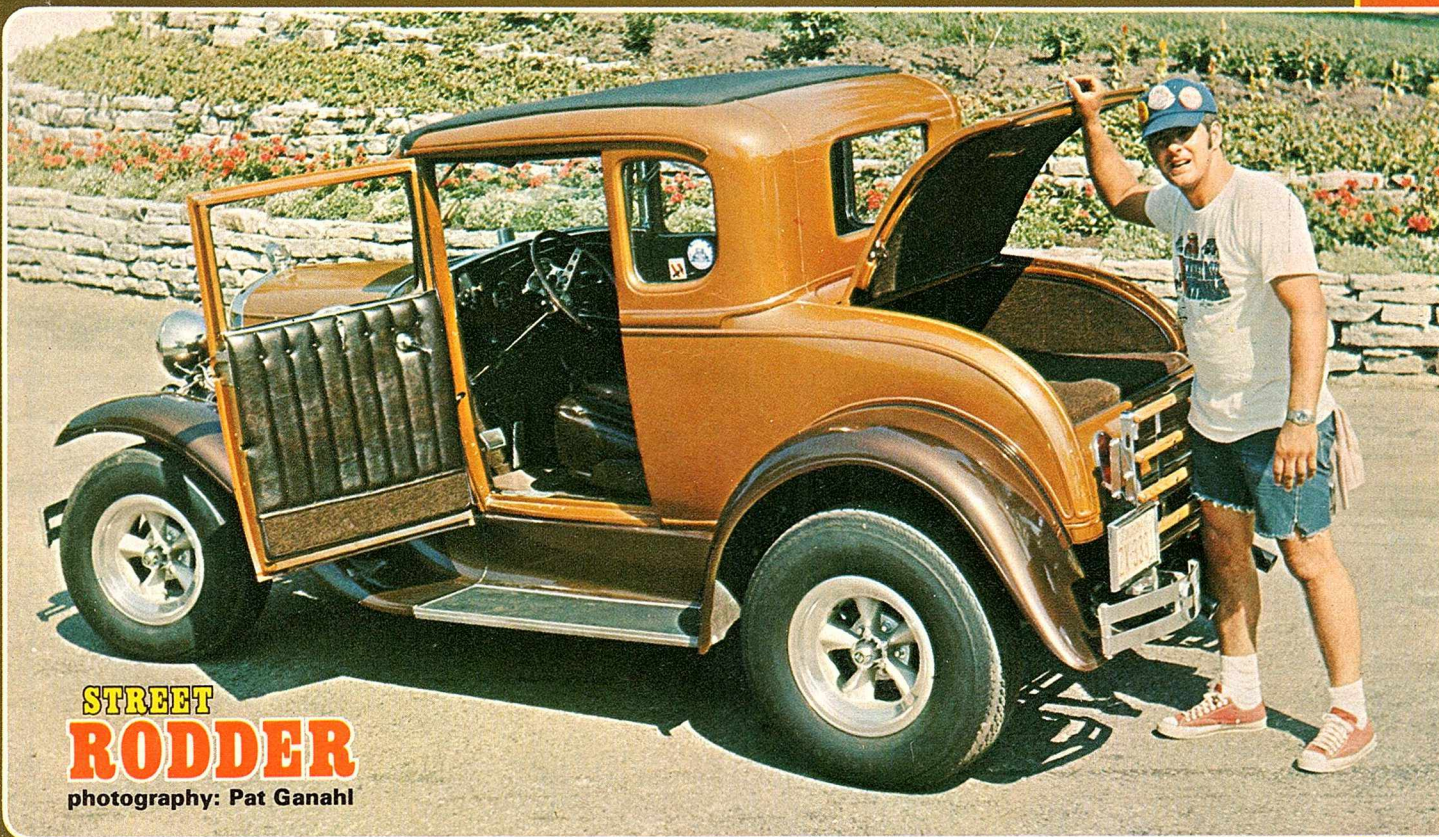
Well, looks like Paul got it all figured out. Drill, taps, gas and arc welders are necessary tools for assembly.



An old saying goes,  
"Do it yourself if you want it done right."  
And this one is . . .

# Done Right

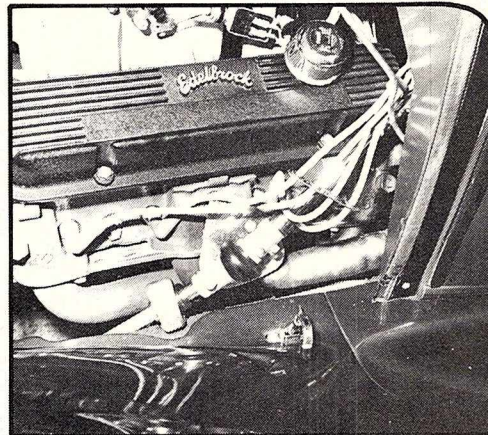
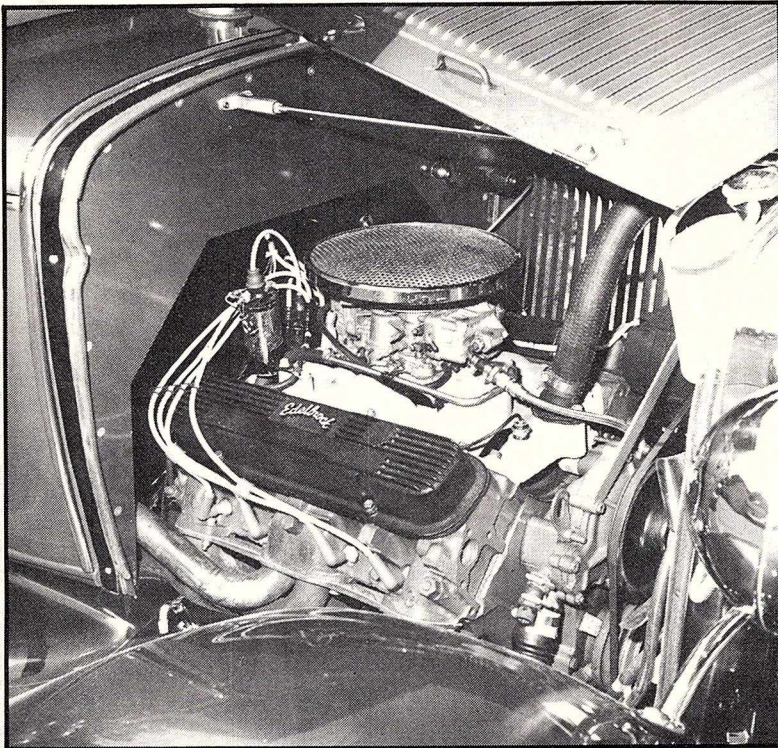
Jerry Hill  
Tulsa, Oklahoma



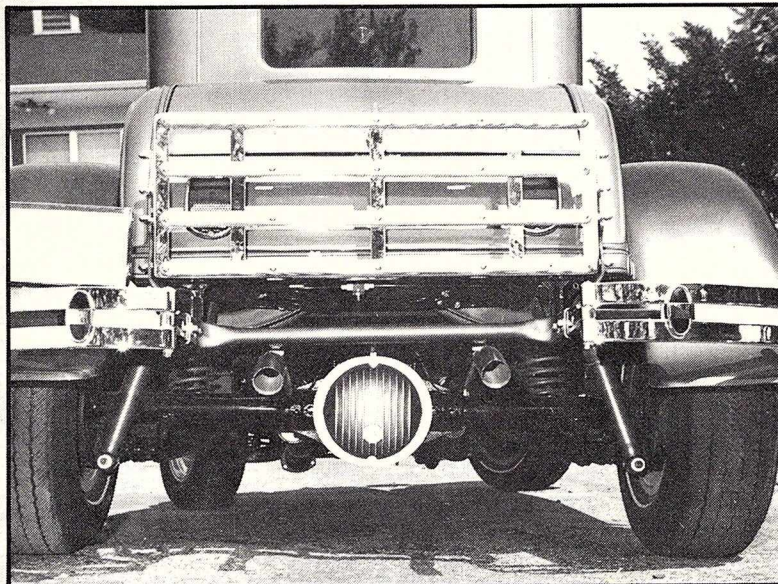
**STREET  
RODDER**

photography: Pat Ganahl



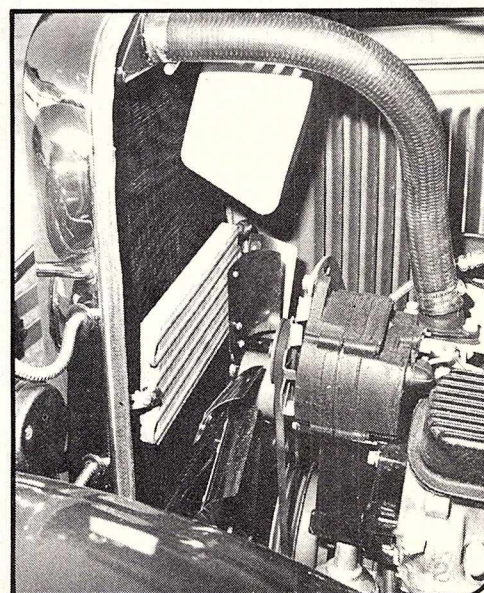
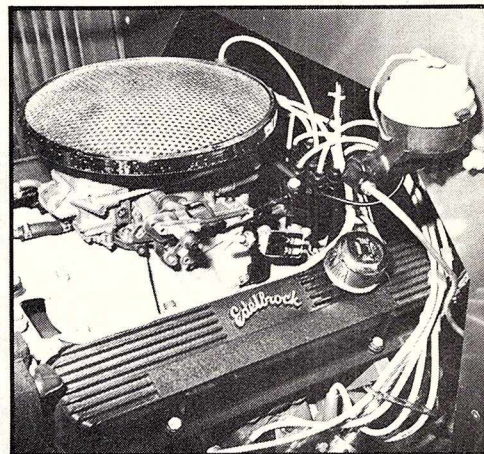
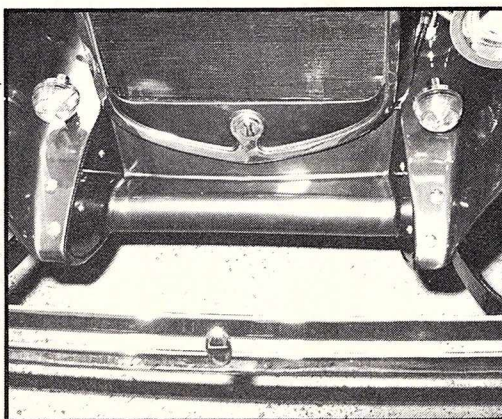


*This car is so packed full of fine details, it is hard to begin. Most important, Jerry did all the work himself, other than upholstery. Engine is big 455 Pontiac featuring 320° Ram Air IV cam, springs, and valves, Isky lifters, and home port and polish job. Reworked Hooker headers handle exhaust; 650 Holley on top. Bent steering arm hooks to Triumph rack and pinion.*



*ABOVE—The Pontiac 10-bolt rear carries stiff 2.77 gears; since a 33 gal gas tank rides above it, this coupe has got quite a range. Firestone radials help, too. Wide rear fenders are Anderson glass; taillights are from VW bus.*

*RIGHT—Talk about workmanship! Rather than let rack and pinion hang out in breeze, Jerry formed fairing for it. Signal lights are Honda.*



*ABOVE—Big Turbo 400 trans cooler mounts right behind Walker radiator.*

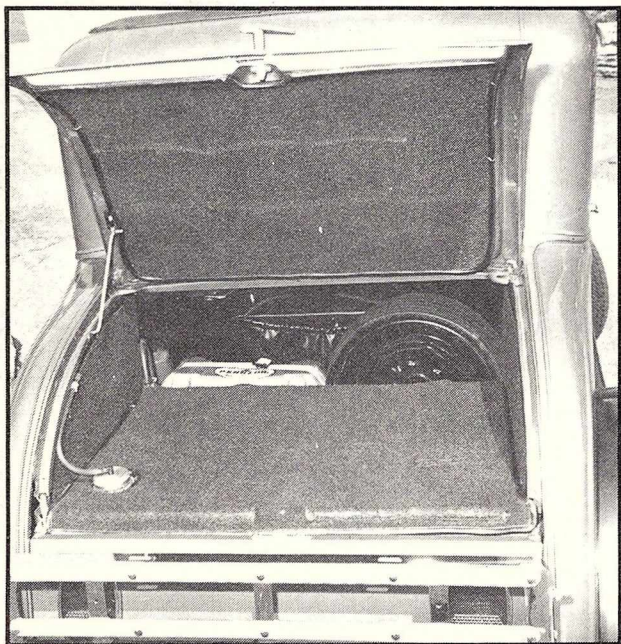


# Done Right

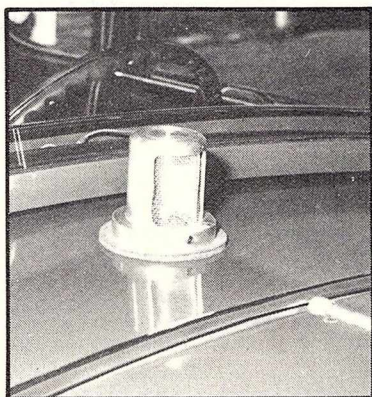


**ABOVE**—Corvair front independent suspension has been fitted to the boxed and braced Model A frame. Pontiac mill called for more lift, so rear 'Vair coils were used up front.

**BELOW**—Trunk is fitted with carpeting to match '70 Cadillac Cinnamon Firemist lacquer. Inflatable spare saves room.

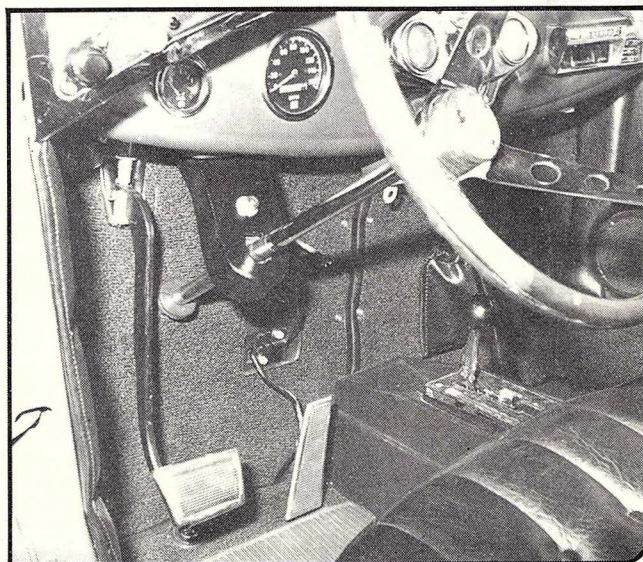


**RIGHT**—Since Model A's had gas tank in cowl, they had no cowl vent. Jerry's tank is now below trunk, so he machined this little vent to fit into gas cap opening. Neat.



**ABOVE**—Brown naugahyde interior was the only part of car not done by Jerry himself; it was farmed to Buddy Pruitt of Tulsa.

**BELOW**—Typical of Jerry's craftsmanship is the home-made steering column, dash mount, and wheel adapter. Little details like these make subtle Model A outstanding.

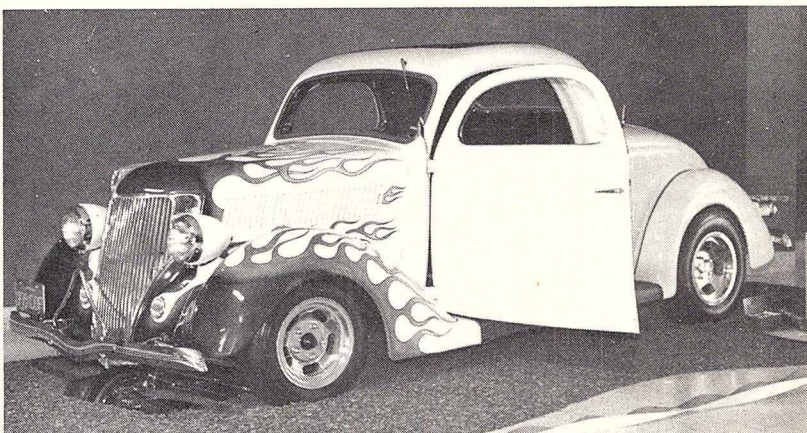
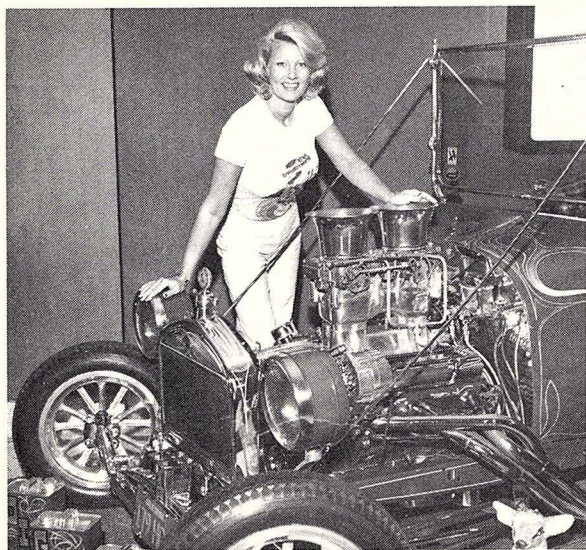




# SHOWTIME IN SAN DIEGO



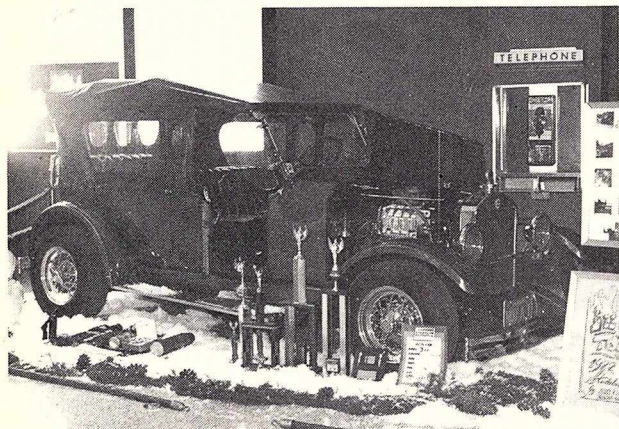
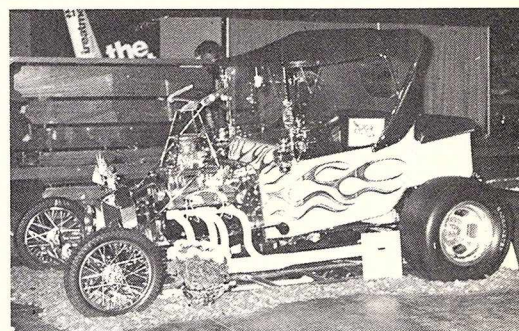
**LEFT**—This beautiful red 55 Chevy pickup belongs to Terry Martin of Chevy's Truckers. He's only 16 years old, too. Keep up the good work Terry.



**ABOVE**—Reginald Bell of Vista brought his immaculate 36. Multi-colored flames over white is trick.

**ABOVE LEFT**—Here's Sandra Edwards of Treatment Co. Dodge roadster is nice, too.

**RIGHT**—From Over the Hill Gang is this sanitary '15 T roadster owned by Bob De Burn.



**Tourin' Tin's** John Smith drove in with his 22 Studebaker, 471 blown 327. Touring is detailed throughout.



**LEFT**—During move-in, everyone was busy polishing their machines. Here's Jake Cushing taking a break? Nope, he's super sanitizing Jag rear in his "Good All Under" '56 Ford pickup. If you've ever seen this truck, you'll know its name is fitting.



by Frank Oddo

Just about any Saturday morning I can cruise down the street to Ron Fensler's house and catch up on the latest backyard improvements on the enormously popular 1953-56 Ford F-100 half tonners. Ron, as energetic a guy as I've ever known, can always be counted on for in-depth information on the nuts and bolts of the stock hauler, but the name of the street rodder's game is modification. And here Fensler really shines.

Well, it seems we had a Shop Manual question on electric windshield wipers for the F-100 and I was sure Ron had the answer. What I wasn't prepared for was a minor bonanza of pickup goodies, all to be gathered in one fell swoop. As you will see in the photos, I did get my answer on the wipers, but what really intrigued me was the job in progress this

particular Saturday — the installation of a power steering unit on a fine black '56.

\* \* \* \* \*

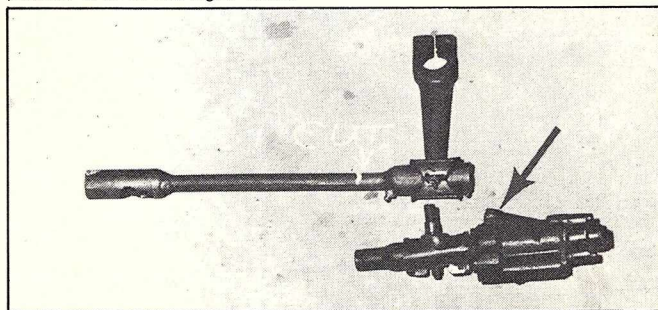
Is power steering necessary or even desirable? Now, on a fenderless '29 roadster I think not. Light weight cars

Make your  
truckin' life a  
little easier with . . .

# POWER STEERING AND OTHER SLICK TRICKS FOR PICKUPS



LEFT—Ron Fensler, master of modification to the mid-Fifties pickup, lays out the components for a power steering installation. The PS parts come from any Ford passenger car, 1957 to 67. Arrow points to tapered boss that is cut from resource car's idler arm and is welded to pickup's drag link. Ron is holding the modified pitman arm in his right hand.



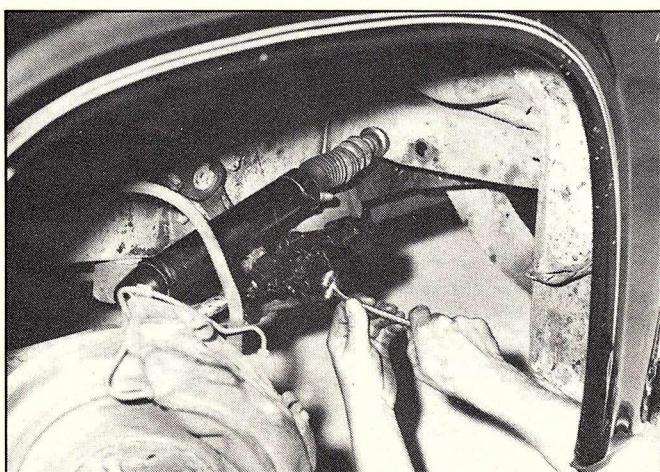
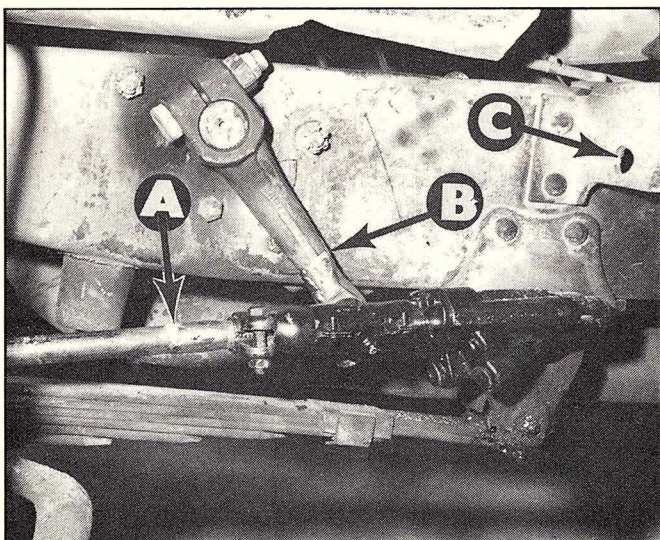
The pickup's drag link has to be cut and welded to the threaded end of the resource car's steering arm. Drag link cannot be threaded as its diameter is too small. Original overall length should be retained. Arrow points to trouble spot in control valve assembly. Check for cracks there. Leaks are no problem as rebuild kit is available for about \$6.



with relatively small physical dimensions will hardly find "power" or "servo" steering action essential to comfortable operation. The most important consideration there is a mechanically sound steering box. But when high initial weight, larger physical dimensions and load carrying capacities are coupled with super-wide, low pressure tires . . . as in the case of the street rodded F-100's, power steering becomes far more practical.

In fact, commercial vehicles such as

*BELOW—The modified pitman arm and drag link installed. Arrow A points to welded link; B to welded pitman. The ball end of pickup pitman is cut off and replaced with socket end from resource pitman. The two welds are very critical, they must be heliarc-ed and magnetic particle inspected. Arrow C points to 3/4" hole in frame, 1 1/4" from chassis rail, where power cylinder is anchored.*



*Modified connectors are installed with countersunk ends in control valve assembly and power cylinder. At this point determine center of travel of power cylinder and weld tapered boss to drag link. (See photo 1.)*

*RIGHT—Hoses needed for installation can be purchased from hydraulic supply house. Get 30" of #5 braided hose, 24" of high pressure hose and whatever length of neoprene hose required to run the lines from the engine mounted pump assembly. Hose "screws" into hydraulic fitting sleeve.*

trucks, buses and heavy construction equipment with their obvious need for reduced steering effort were the first mass users of power steering. And long before the option became standard on American passenger cars. (It is true, however, that the 1927 Stutz did have a mechanical power steering device, but it failed to fire the public imagination.)

There are two or three basic types of power steering, but the one Fensler found most practical for installation on mid-Fifties pickups is the Ford-Bendix unit. Studying it, we felt that it might also be adaptable to other vehicles, but that extrapolation is up to you.

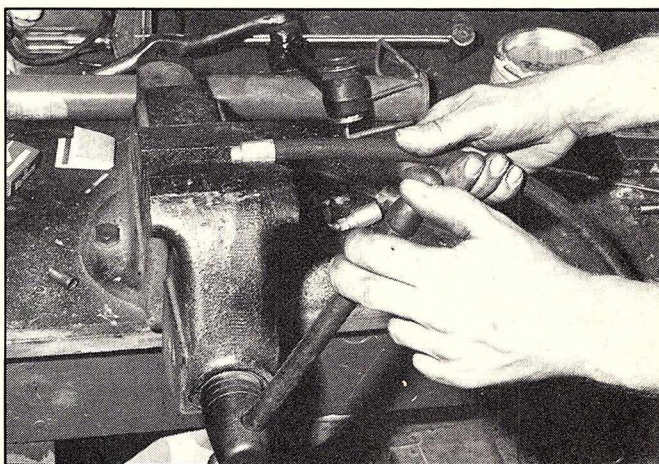
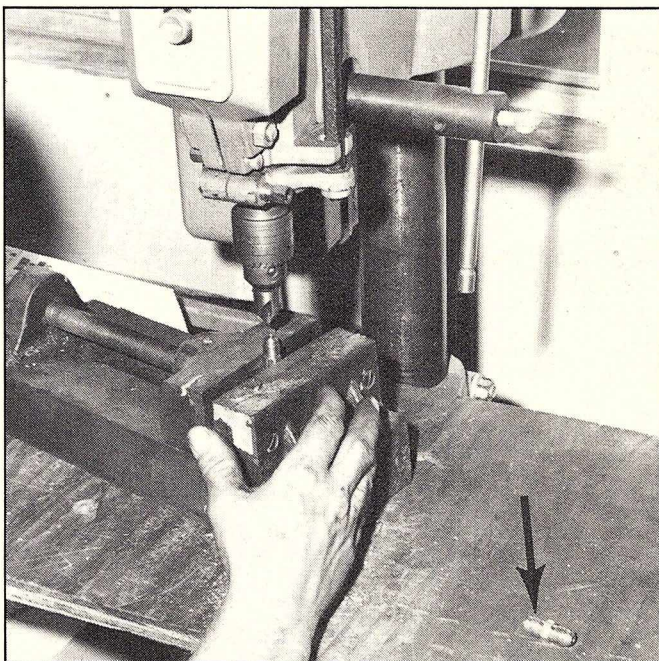
The power steering unit manufactured by Bendix is known as a "linkage booster" type. (Monroe, Ross and Saginaw have produced similar designs.) As the name implies, the power cylinder is an active part of the steering

linkage rather than the steering gear (as in the Chrysler, Gemmer and some Saginaw units). In the Bendix, the control valve assembly is separate from the power cylinder assembly and works in conjunction with the stock mechanical steering gear. That's what makes it readily adaptable, for with a few — but critical — modifications, the power components can be added externally to any steering design comparable to the F-100's side-swinging pitman arm.

**But, please let me make one thing perfectly clear about welding steering components. You must have access to high quality heli-arc welding and to an equally high quality magnetic particle inspection station such as the USAC Magnaflux stations found near airports.**

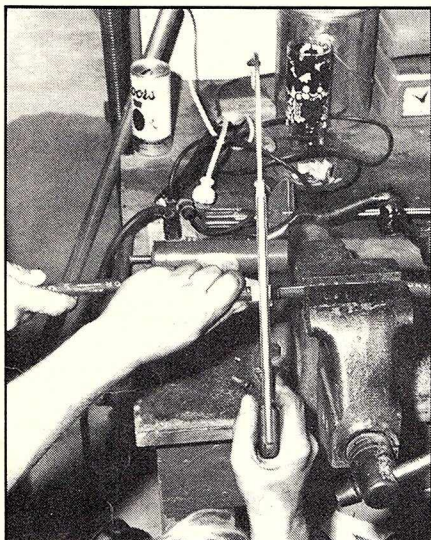
The operation of the Bendix style unit is simple: As the steering wheel is turned

*BELOW—To avoid paying high prices for hydraulic hose kits, Ron elects to make up his own. Necessary fittings are not available, but standard brass connectors (arrow) can be easily modified by countersinking one end of each of the four required. Use #78 countersink or have this done at a hydraulic supply house.*

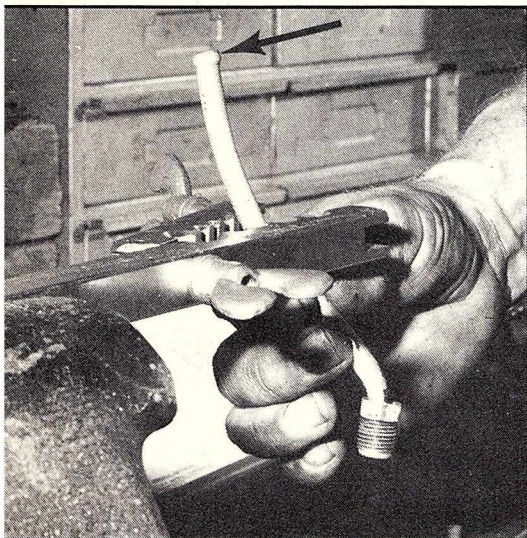




# POWER STEERING AND OTHER SLICK TRICKS FOR PICKUPS



Determine length of internally braided hose needed and cut it with a fine blade. Tape it before cutting to avoid unraveling. Braided hose is used from the control valve to the cylinder.



Use steel tubing and standard hydraulic fittings to make connections from the pump to the control valve. Simply partially double flare tubing to obtain a swell (arrow) and clamp hose over it.

**RIGHT**—Ford trucks had both vacuum and electric windshield wipers during the years 1953 to 1956. The changeover from vacuum to electric is a straightforward switch using existing holes in the firewall. However, the '53-'55 6 volt motor and gearbox mount on the cab side and the '56 '59 12 volt mounts on the engine side. If a conversion from 6 volts to 12 is desired, simply replace motor in '53-'55 with one from '56-'59 truck.

with a rim force exceeding four pounds, the pitman arm mechanically activates the power valve which in turn directs fluid under system pressure from the pump to the power cylinder. The power cylinder itself is a single piston, double-acting unit anchored to the truck's frame. The free end of the cylinder is attached to the drag link.

The piston is stationary, the hydraulic pressure causes the cylinder to move axially in a longitudinal direction. And, as the cylinder moves, so goes the drag link to which it is connected.

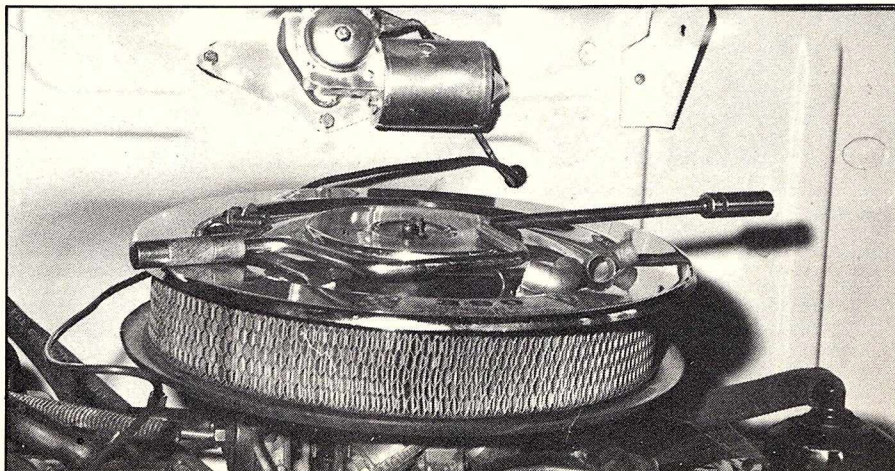
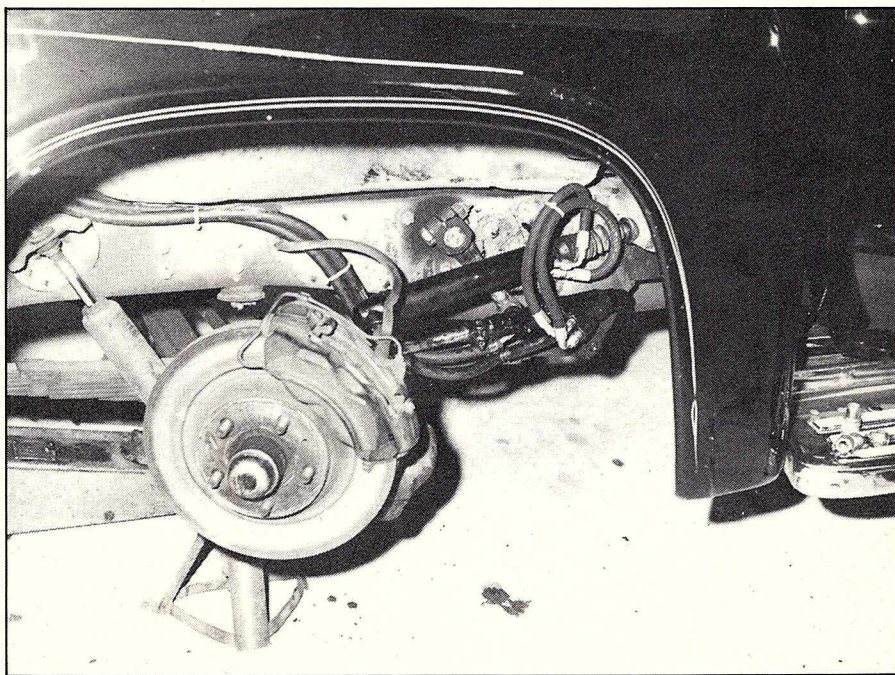
Manual steering force initially overcomes the resistance of a centering

spring in the power valve before the valve becomes operational. When the steering wheel rim force falls below four pounds, the valve is neutralized and steering wheel movement is without power assist.

In the opinion of many, this particular type of power steering is the safest kind. If you've ever driven a late model car with the steering gear or "integral" type of power assist and had the motor die, you know the sudden demand upon your arms and shoulders. Heaven help the ninety pound woman whose car quits in the middle of an intersection during the rush hour.

But in the event of a fluid loss or

**BELOW**—Finished plumbing on power steering is neatly out of the way in spacious pickup fender well. Front end alignment should be rechecked. Usually toe-in will have to be corrected for power steering and occasionally 5° to 6° positive caster is necessary.



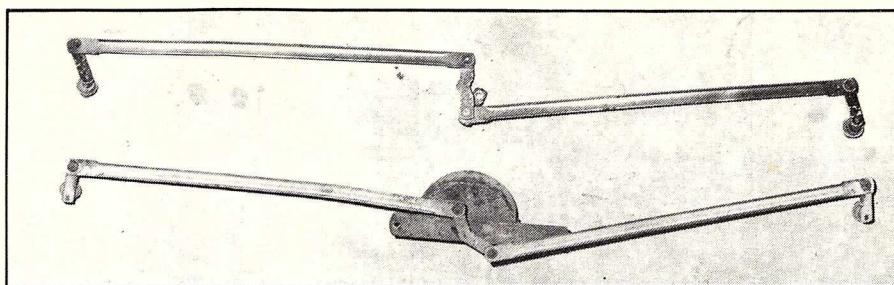


power failure, the vehicle with a linkage booster will not be any more difficult to steer than it was originally. This is why it is called a "part-time" power steering — its activation is only within a four to fifteen pound rim force. Besides that, there is a distinctly better "feel of the road" with the linkage booster layout.

Before we turn you over to Ron for a blow-by-blow replay of the actual installation, a word about the power steering pump is in order. The most common variety is the positive displacement eccentric multiple-vane type. Here the rate of flow increases directly as the pump rotation speed is increased, but with a controlled flow between 3 and 5 gallons per minute maximum. System pressure is a bit over 1000 psi.

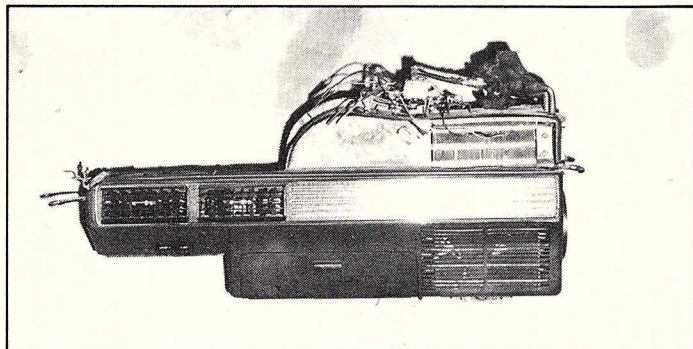
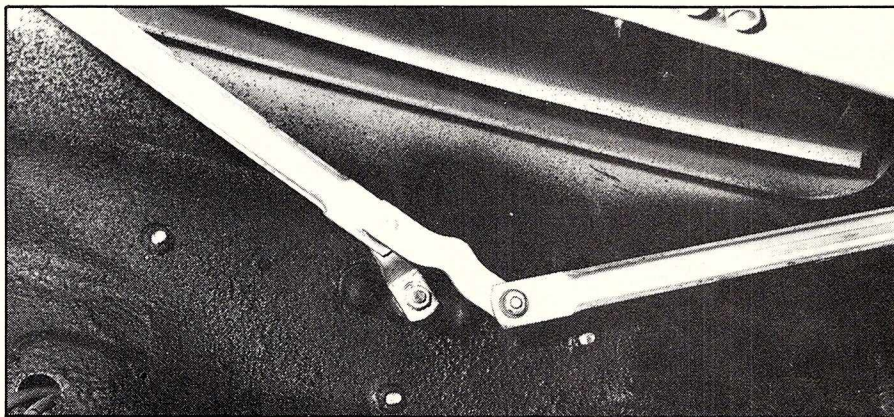
The specific pump you will use is of course dependent upon the engine in your pickup. A trip to the wrecking yard should provide a rebuildable assembly, the appropriate support brackets and crank pulley. Always use new belts.

Okay, now let's see what Fensler and his Pick-Ups Limited cohorts are getting themselves into.



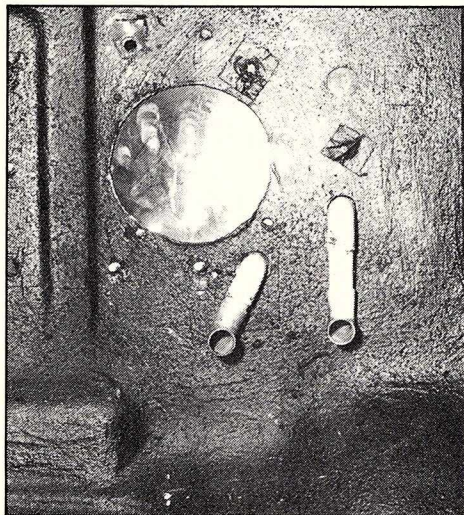
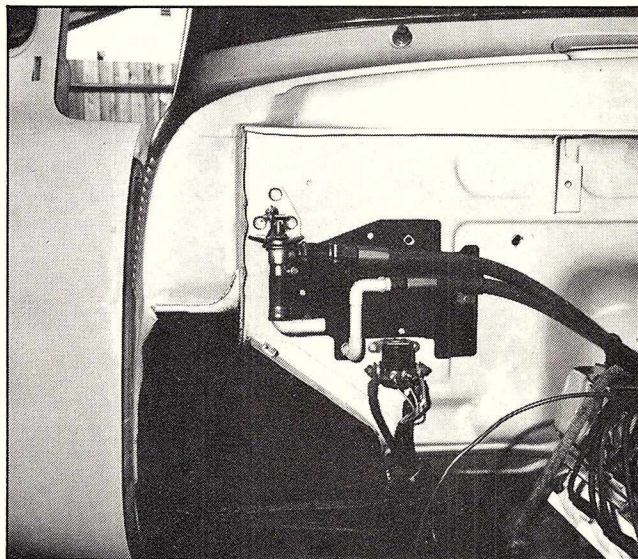
ABOVE—Electric wiper arms (top) are slightly different from vacuum operated type, but travel and hookup to wiper tower is the same.

BELOW—Close up of back side of '56 installation shows simplicity of changeover.



Want to cool and warm up that '53-'56 pickup or panel truck with the same unit? Try this one for size. Combo set comes from 1966-70 Ford ½ or ¾ ton truck. It is rather large, but the installation is a natural.

RIGHT—F-100 Custom Cab truck already has the heater setup and Fensler merely eliminated preformed rubber hoses in favor of two ½ 90° copper elbows sweated together.



LEFT—This cab-side shot of firewall shows how elbows fit through to feed hot water to heater.

RIGHT—Mock-up installation shows how well combo fits under the dash. Original dash glove box is lost, but unit has a separate one built in. Ron hasn't finished the wiring or A/C plumbing yet, but we'll keep an eye open for any further Fensler-styled tricks.

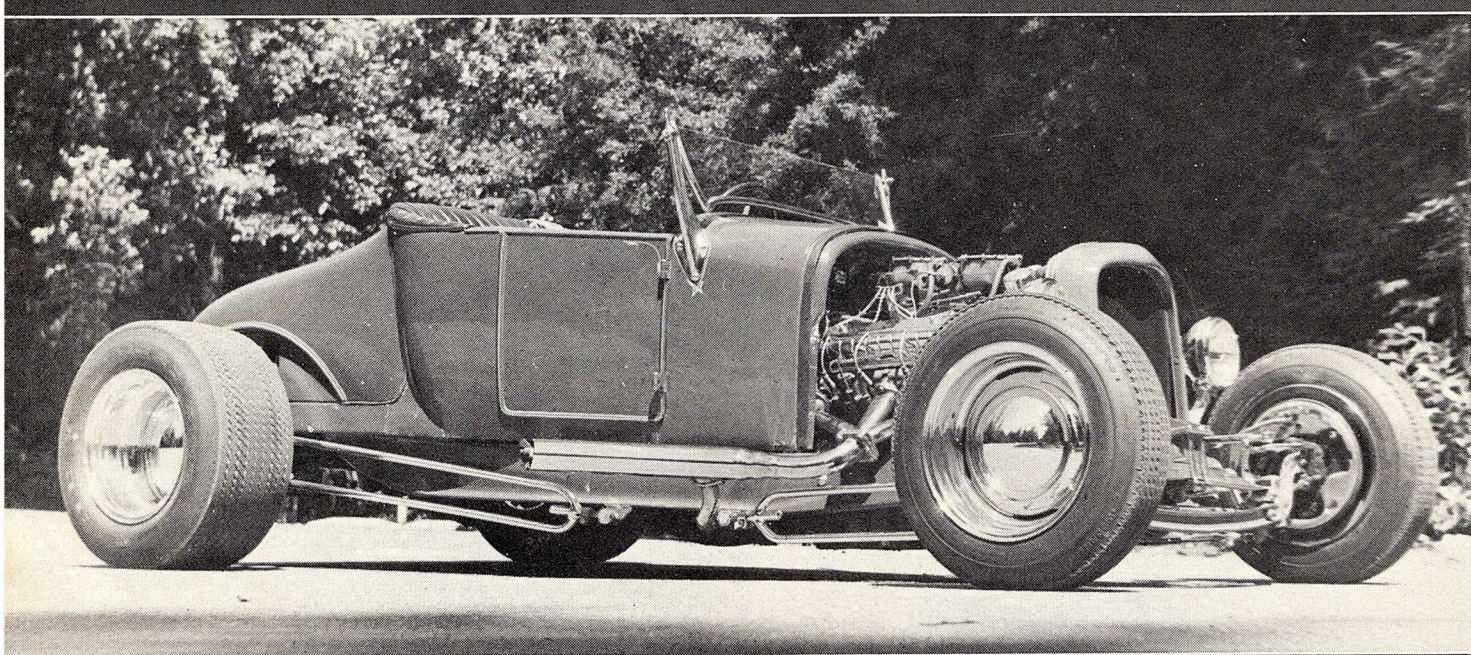




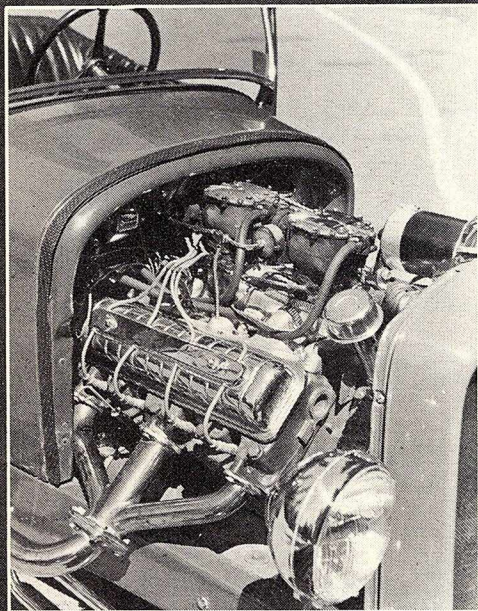
# ROADSTER

## From Way Back

Larry Hyndman  
Tacoma, Washington



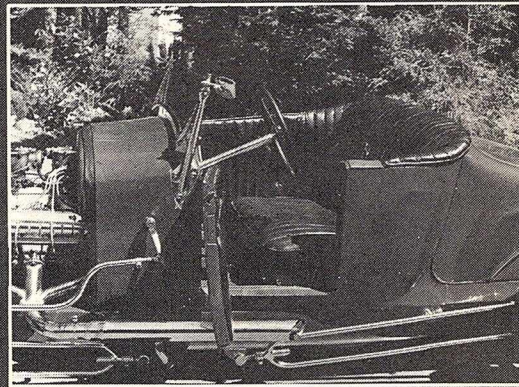
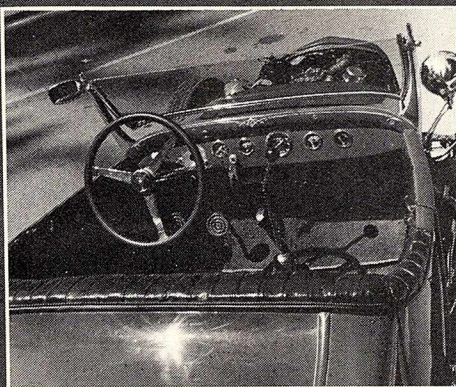
Originally built in 1947, with a flathead and a track nose, it has changed little with the years.



protrudes from the left side of the cowl. The early Olds mill sports 303 inches and mounts a pair of those "weird" old two barrels. Note the past fine workmanship in the rolled recessed firewall and the smoothly blended headers. Dig out your old '56 Hot Rods, and see if you can find the feature on this one.

photography:  
All Woodbridge

This little red '27 T was first built into a hot rod in Oregon in 1947. The Olds engine and cut down '32 shell were added sometime in the following years by any one of a succession of subsequent owners. Other than "modern" tires and wheels, however, the roadster remains basically unchanged. The '32 chassis carries a '34 Ford rear end and transmission. Up front a dropped beam axle rides on a "suicide" perch. The interior wears two-inch black rolls and pleats; Ross steering





# "AUTO" BIOGRAPHY

(Continued from page 17)



At Auto Electric Engineering I had acquired a little English Austin Sedan called an A-40. I wanted something fun and neat for the street, so I decided to build a little street rod out of it, utilizing two 327 Chevrolet engines. A few years ago this car was featured with a red paint job in Popular Hot Rodding Magazine. It had two Chevis in line in it with a three speed Chevy transmission and an Olds rearend. I drove it for over two years as a transportation vehicle. Later we put together an English Austin Taxi Cab with a Hemi Chrysler in it which was a tow car for Rose's Corvette.

Toward the end of that year a fellow from a company called Walker Foundries came by and showed me a new wheel he had designed. Well, I immediately promoted him out of a set of these nice wheels for my roadster, for my Lakes tires, together with a set for my slicks. Then I also promoted another set for Rose's Corvette. He liked the work that I was doing as far as my little catalog for the wiring went. I seemed to know what I was talking about, so he wanted me to come to work for him and put together a catalog. So together with my equipment, tools, accumulated knowledge, I closed A.E.E. and went to work for Walker Foundries in January. While I worked there I was busy assembling the catalog and visiting different shops displaying their wheels. I ran into many new vehicles for the drags being built and started shooting pictures of them. This was the beginning of my free-lance photography life. After three months, they wanted me to go to work selling wheels (after the completion of the catalog), which I refused, and quit. I now went into photography and writing full bore. My first wife and I had long since separated and after two years Rose and I were married.

Together we began writing and shooting pictures at a fast and furious pace. We got our income up to as much as \$1500 a month, which for the first time in my life, was pretty fantastic. During my time writing for Popular Hot

Rodding, Rod and Custom, and other books, I used my roadster constantly for story material and new products. Every rebuild was photographed and displayed in the books I wrote for.

Rose retired the Corvette, and we sold the components off it and traded the balance for a '32 sedan, which we in turn sold at a later date. We finally built the big blown Ford engine for Popular Hot Rodding Magazine and put it in the Roadster. About this time I made the mistake of getting a chopper motorcycle, which I was eventually hurt on very badly. I lost interest in cars for a few years. Actually, about seven years passed before I finally got back into cars once again. Since then I've purchased several cars in attempts to regain my interest, but I just couldn't take pleasure in these cars because I hadn't constructed them myself. This included a '34 chopped Sedan which we drove to Mexico City and Model T Center door Sedan. I have now built my first street racer, which is the little Dodge pickup that you've probably seen featured in this magazine and we are in the process of one or two more vehicles now.

During these past seven years, I became very strong in the Chopper market. While still in a wheelchair I was manufacturing parts for bikes in my garage in Buena Park. Rose and I got a small building in Buena Park and opened our business, called A.E.E. Choppers. For several years we reigned supreme in the chopper field. Shipping millions of dollars of parts. During this time I had no interest in cars, only in bikes and my business. We started STREET CHOPPER Magazine, followed closely by HOT BIKE Magazine, CHOPPERTOONS, and then, CHOPPER: The Motorcycle Guide. Finally, through the nudging of Tex Smith, who worked for us at the time, STREET RODDER was born, and slowly but surely, my old automotive desire reappeared. It may not be as vivid as it once was, but it is nevertheless, back.

You have probably noticed that I quickly skimmed over the many buildings and rebuildings of my '32 Hi-boy roadster. There were also many adventures connected with this car. But I am saving all that for a later issue of Street Rodder. We have now traced the car back to its original builder, and have just recently located its present remains. Watch for the story of the car's complete history, which will be coming soon.

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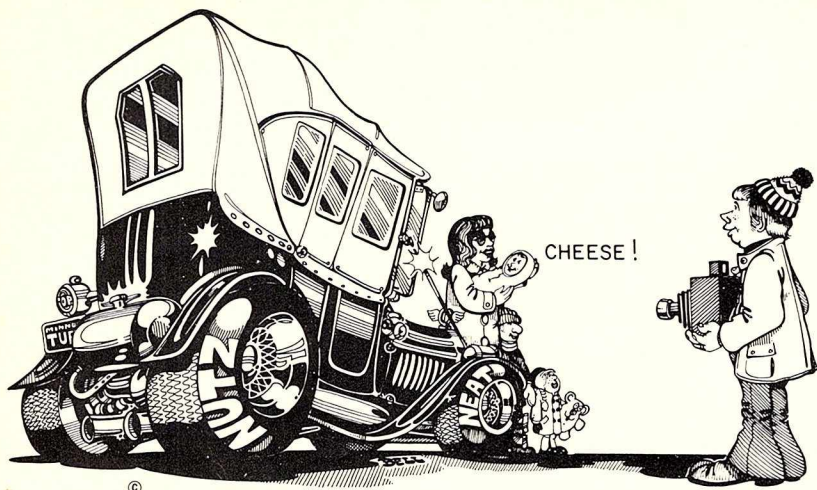


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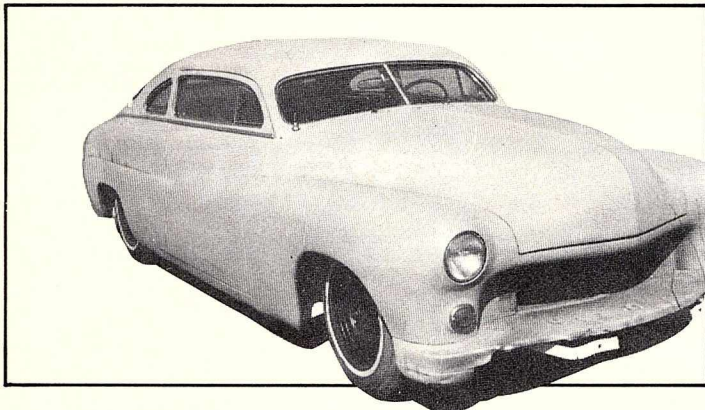
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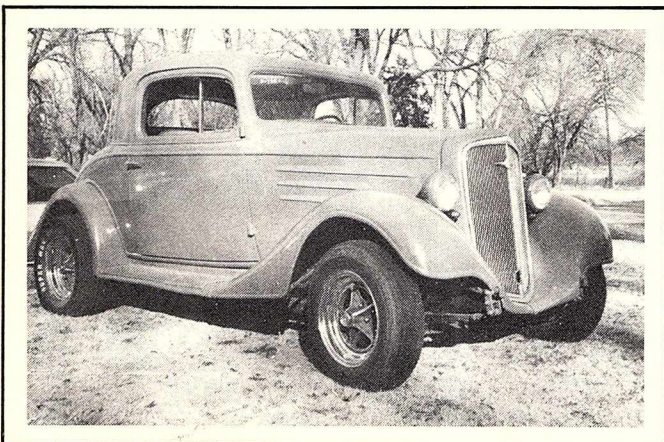


## early IRON

**W**e want photos of your street rod, under construction or finished. Or maybe you have an interesting shot of some early iron rusting away behind a barn. If so, send it to Street Rodder, Early Iron, 1132 North Brookhurst, Anaheim, California 92801. Photos cannot be returned, however.

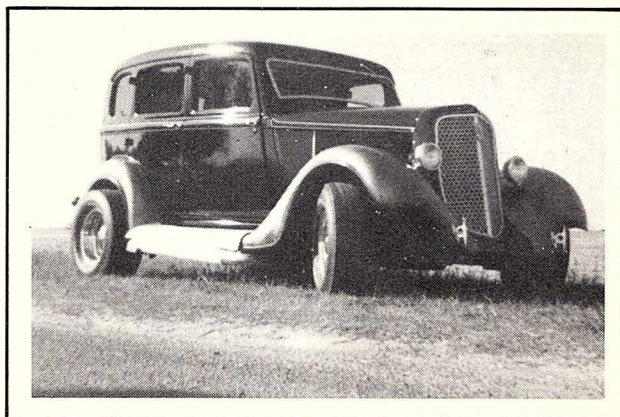


From Milwaukee, Wisconsin, is this chopped '49 Merc with 283 power. It's Bob Furlong's second custom; his first was a chopped '51 Merc. Shaved hood, deck and door handles smooth overall appearance.

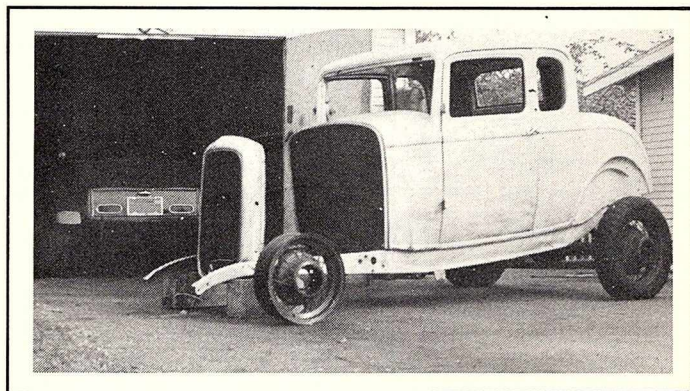


**LEFT**—Bob and Diane Gieswein of Medicine Lodge, Kansas, spent many hours on their 35 Chevy. Features include burnt orange paint, 300 horse 327, Powerglide trans, and Hedman headers.

Here's another 35 Chevy, this time a pickup that's been in the family since it was brand new. Runs 283, 3 speed, 56 Chevy rear. Wayne Taylor owns it and lives in Kennebunk, Maine.

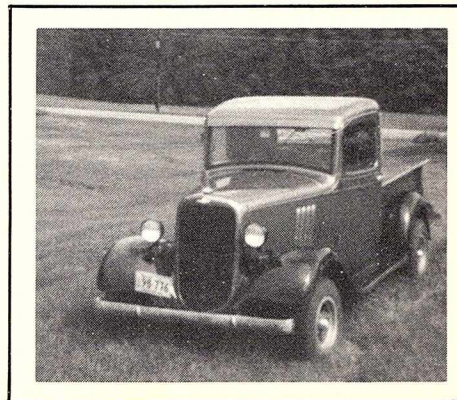


**ABOVE**—Here's a sharp looking '34 Plymouth 4-door sedan that's painted black (silver moon dust fenders), 327 Chevy. Owner: Mike Sydney, New Port Richey, Florida.

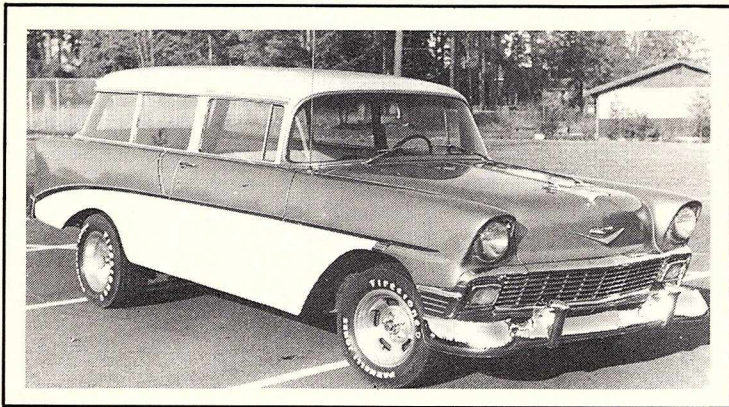


**ABOVE**—Gary Rehrenbacher of Whittier, California, started with only a 32 grille and shell which he bought for \$50. Now he's got a few more components. Send a flick when it's done, Gary.

**BELOW**—This super cherry '57 Chevy Bel Air two door belongs to Jack Slade of Danville, Virginia. Every piece of chrome is NOS; car is 100% original. It's a restorer's dream car.



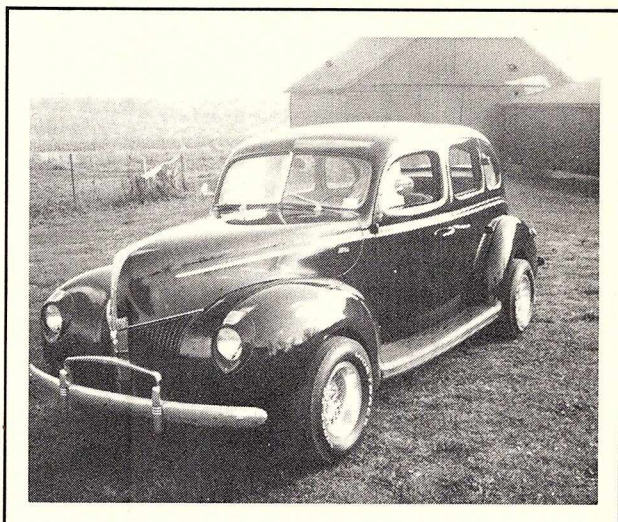
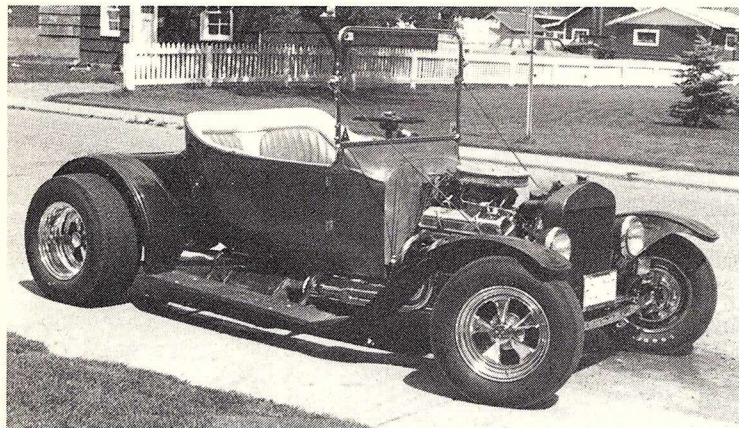




LEFT—Sanitary '56 2-door wagon is from Everett, Washington. It's painted two-tone (gold and mustard) and runs '64-283, Muncie, Hurst shifter. Owner: Steve Danic.



ABOVE—From Youngstown Street Rod Ass'n out of Salem, Ohio is this 32 Plymouth coupe owned by Rich Charnesky. Car is still being worked on, will soon be finished.



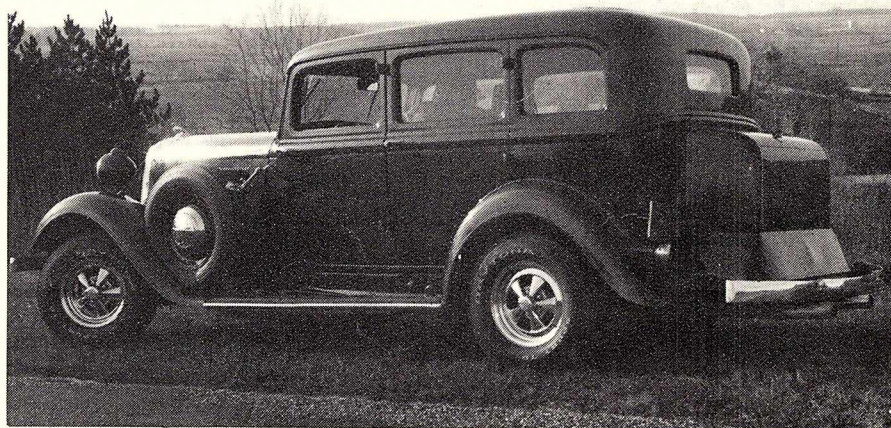
ABOVE—Marshall Kiddel found this 40 Ford 4-door sedan in Iowa and bought it from a lady whose husband bought it brand new. It now resides in Kirkwood, Illinois. Car has 54,000+ miles and original black baked enamel.



ABOVE—Not too many of these around in this condition. It's a '58 Chevy Cameo pickup owned by Tim Devlin from Topeka, Kansas. Nice job Tim.

MIDDLE—From Sault Sainte Marie, Ontario Canada is this full-fendered 23 T roadster built by David Seabrook. Took three years from start to finish. .060 over 327, General Kinetic cam, 850 Holley double pumper, and 4-speed are some highlights. Ford posi unit sits under turtle deck.

RIGHT—In Airville, Pennsylvania, there is a neat red 33 Dodge 4-door sedan owned by Bob Krouse. Running gear is '70 318, auto trans, Duster 3.90 rear.





# TECH BRIEFS BY BUD BRYAN

## COLLARING THAT COLUMN

**T**he need for inventiveness is seldom more evident than when there's a steering column to be hung. Obviously there are numerous occasions where contrivance — and plain old unabashed trial and error — gets a job done. In my dictionary, to contrive is "to form or create in an artistic or ingenious manner." In street rodding terms, it means to make the most of what few tools and materials you have. This you do all the time.

Steering columns, however, do present certain problems. Nothing monumental, you understand. But the job does require some thought. Topside, where the whole business becomes collared and is fastened to the obvious connecting member, the dash panel, there's little or no worry; assuming that is, that the dash is sturdy enough to bear the load. Most of them are. Getting things solidly bolted to the floor is where many of us get into trouble.

As pirated from any one of a number of late model passenger cars or trucks, take your pick, modern steering columns with their conglomerate of jacket/shaft/tilt head/blinker/key switch and what have you, pretty well do it all. Except when it comes to installation in an old car. The degree of difficulty in this regard is directly proportional to the condition, type, and strength of the floorboards you are working with. Marrying a late model column to an early cockpit usually requires two things: 1) strengthening of the floorboards themselves . . . which then allows introduction of the other necessity 2) a mounting collar or ring addition of the type described herein.

In this case the column was positioned in the old car so as to allow the built-in shift lever to clear the floorboards by an inch on the engine side as the column protrudes through the floor opening. Here is found the splined and now exposed stub of the shaft that once was secured directly to the power steering box itself. Now, in this mix 'n' match configuration that unites the old and the new, a linking shaft has become necessary, and unfortunately, space lacking in this go-around, a detailed explanation of same will have to come at a later date.

The point of this treatise has to do with getting that column fastened to the floor, and getting it fastened but good. Fig. 1 of the two accompanying drawings

illustrates perhaps the simplest of all methods for providing a steering column with a collaring device. Steel is the preferred material, of a thickness close to .030" so that cold forming is possible. To begin with, the band of steel is cut to be a bit lengthy, but this is done purposely. Finalizing length comes after you've decided on the thickness of your cushioning (vibration dampening) band of hi-grade rubber. If you're lucky, this rubber piece will be included in your "used" column package as purchased from Axle Rod's down the street. Otherwise get a sample of same from your new car dealer parts counter, or make your own. But should you go the do-it-yourself route, be sure to use a high quality, medium resiliency chunk of rubber that's approximately 3/16-in. thick.

The band of steel is cold wrapped about the column's jacket, prior to the rubber being slid into place. A tight fit is what's required here, and the band is best adjusted for tightness by making it conform to a smaller diameter than re-

Pressure from the vice jaws will tighten the band against the rubber to the point where you'll be able to determine and mark your final cutting line. Make the cut with a hack saw while the band is secured in the vice, jaws gripping the open sides of the band. Welding or brazing joins the mated edges and neatness prevents bead globular build-up that could create hang-ups during installation.

Now comes the difficult part. The completed band must now be weld (or preferably braze) attached to a steel plate of the same material and thickness as the band. Fig. 2 illustrates what the contrived contraption must look like when all is said and done. The need for an opening is apparent — through this hole must pass shift lever and jacket. Suggest you provide the hole, then add the ring . . . warpage can result. Tack welds are needed in four or so places around the circumference and thought to be best for preventing warpage is a tacking technique that employs low heat brazing rod and a tacking pattern that

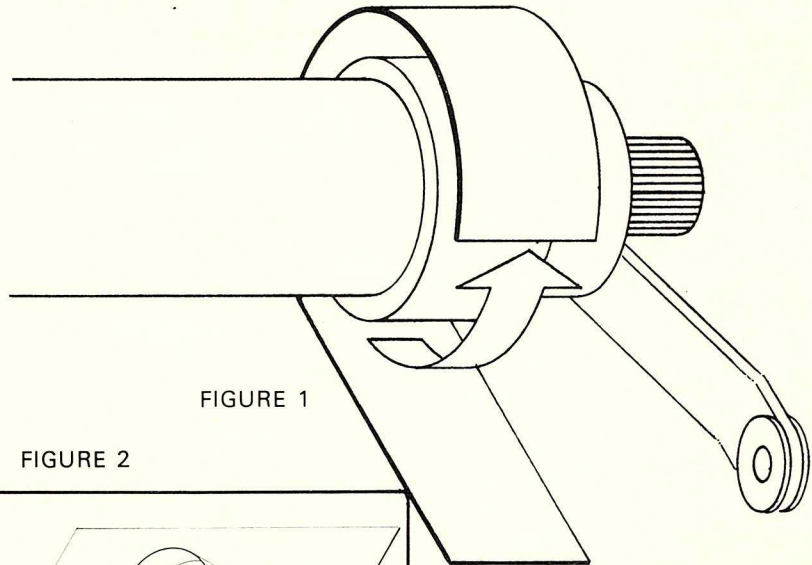


FIGURE 1

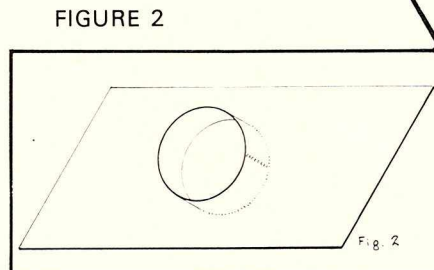



FIGURE 2

could best be described as a criss-cross affair (+). Cross tacking prevents heat build-up. Ditto for letting several minutes roll by between tacks . . . take it slow and easy.

The method in which you attach this sturdy plate and collar device to your floorboards is the easy part — be they wood or metal. It matters little, though I would suggest you use something besides mere sheet metal screws or pop rivets. Simply make things as solid as possible. No disputing the permanence — or neatness — a few carriage bolts can lend to such a worthwhile creation. 



# ARGENTINE

(Continued from page 29)

two years of filing forms and going through channels, Bill finally got his application for an export license before the National Congress for a vote. It was narrowly passed. He is now the first American who has been granted a license to export old cars from Argentina to the United States.

With license in hand, Bill secured as a partner Steve Tavera, and with their combined capital they purchased over a hundred early cars — each one complete and most in running condition — and they secured “options” on about four hundred more. But don't think that the cars were a steal. They cost as much as a thousand dollars a piece to begin with, and then the Argentine government assessed export taxes on each one according to its estimated U.S. current value. The tax alone on the first seventeen cars shipped up was \$36,900.

This “first batch” was really sort of a trial run. Bill and Steve picked out some of the less valuable vehicles — early Chevies, T's, and A's — put them on a ship and hoped for the best. They were stored on the open deck, under canvas, but the ship hit a storm en route (crashing 40-50 ft. waves over the bow); and apparently vandals hit some of the cars, too. When they arrived in San Pedro, many had their tops broken (all 17 are touring cars), and several small pieces were missing, like radiator ornaments, lights, etc.

In spite of these problems, however, you can see from the photos that they are still far from “sad.” Probably the greatest points in their favor are their completeness and the fact that they are all almost totally free from rust. They have obviously been well looked after through the years: most have been reupholstered, repainted, and even repinstriped . . . perhaps several times. Almost all had been fitted with sealed beam headlights, and minor mechanical improvements (like a VW carburetor on one Chevy), which attest to their continued use. When Steve showed me the cars, soon after they had arrived, he fired up one of the '29 Chevies and drove it out of the garage. It didn't even smoke!

This first batch of touring cars (seventeen) has cost a total of \$79,000 to reach and enter the United States. Obviously,

Bill and Steve are going to lose money on these cars — about \$50,000 worth. As of this writing Steve has sold two of them, a '31 Chevy for \$1800 and a Model T for \$1500. They hope to get more like \$2000-2500 a piece for the rest of this group (which, by the way, includes a '26 Whippet, a '28 Erskine Studebaker, three '28 A's, one '29 A, four T's, and nine Chevies from '25 to '31).

Obviously, they have bigger plans for the future. At present, Bill has secured a large warehouse in Argentina (as well as a couple of junk yards) and has 90 more coars ready to ship. But these will be carried, six or seven at a time, in the hold of the ship so that damage or loss will be minimized. His license for exporting 1928 and earlier cars will expire in June, so these earlier cars will come up first. Then hold on to your hats, because they have some really “good stuff” to come later. Like '32 Ford Phaetons, '34-'36 Fords, and several classics like a '32 Packard Phaeton and a '33 Cadillac V-16. Naturally, Bill and Steve will attempt to recoup some of their initial losses through the sale of these more valuable cars. So if you are possibly interested in acquiring one of these early “low buck” (!) models, act quickly. Steve Tavera is handling everything on this end (U.S.A.), and you can call him at (213) 374-8923, or write to him at 831 N. Harbor Dr., Redondo Beach, CA 90277. They have taken a couple of the cars to local swap meets already, and intend to make it to quite a few this summer, in the California area.

From now on they will be importing approximately six cars every month, and Bill expects his supply to last for a few years. At present they have no intention to get into the parts business; strictly complete cars will be sold.

And lest you might think that the U.S. is once again raping one of our neighbors of its natural resources, Bill is also considering setting up a first class restoration shop down in Argentina, training some of the local craftsmen in the arts of old car rebuilding, and getting that whole country hooked on the pleasures and rewards of fixing up old cars. Of course, he won't have to teach them anything about the fun of *driving* them, though — they've obviously been doing that all along.

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**D**id you hear about the van happening at Disneyland? Man, there were lots and lots of vans all parked together in the parking lot. It looked like about 2,000 but it totaled 1,210. That's a heck of a lot of vans, probably the largest one in California so far.

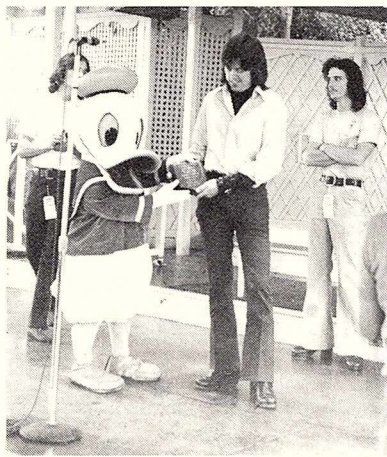
Vans LTD is the club that put on this outasight happening in Disneyland. Bill McCormick, president of Vans LTD, spent much of his time trying to get everything together. And he and his club did just that. Nice job group.

Before the happening actually took place on January 19th, some 4,065 tickets were already sold. They cost five bucks a head for unlimited use of all the rides in the park. It was a one-day thing that lasted from nine in the morning to seven.

I arrived about 9:30 and already the major part of the van parking lot was filled with over 500 vans. On Katella and Harbor Blvd., there were some long lines of vans closing in on the entrance gate. As soon as you got there, you entered the amusement park and checked out all the rides, shops, or whatever.

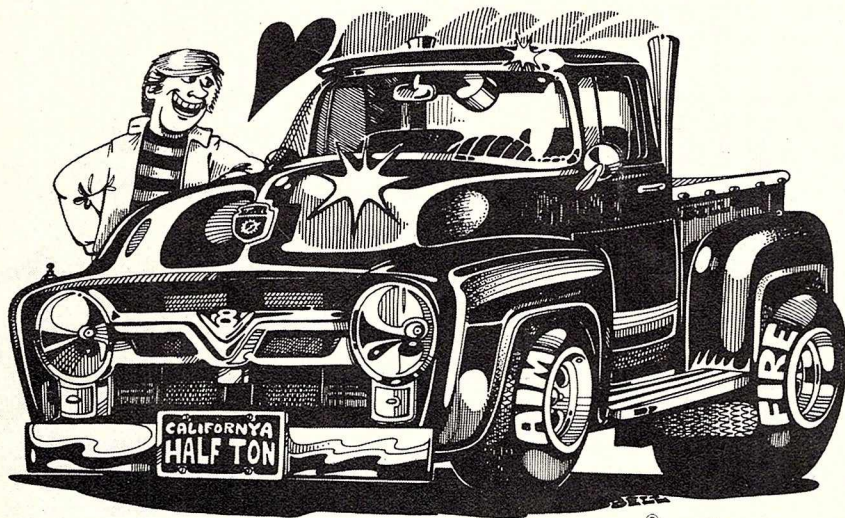
While everyone was enjoying themselves with the rides and stuff, a few Disneyland officials spent much of their day judging every one of the vans in the parking lot. That's a lot of judging. These judges were combing the lot looking for the Best Overall van. Only outside appearance was judged.

At the awards ceremony, Nor Cal Vans took Participation, both for the 60 some-odd vans they brought down as



well as the most tickets sold — 172. The Longest Hauling Club was Southern Ontario Vans of Canada. The Longest Hauling Club (in State) was the Van Clan. Ken Mashburn went home with the trophy for Longest Hauling Individual. He trucked all the way from Tacoma, Washington. A special award was also presented to Ivas Berzins (pictured with Donald Duck) of Discount Van Accessories for tremendous effort in promoting the Disneyland event and the van sport. Greg Huntoon of Long Beach got the trophy for Best Van in Show. His '63 Econoline was originally an \$80 junk yard special. \$6,000 later, his van was completed; main feature is chromed undercarriage.

When I spoke to Bill McCormick about possibly having another happening at Disneyland next year, he said that he was already working on it and hopes to have vanners only in the park. See, this time, besides the vanners, it was also open to the public. Even so, there was not one incident and everyone really had a fantastic time. Again, congratulations to Vans LTD for a job well done. Hope to see everyone at the next Disneyland happening.



# TRUCKin'



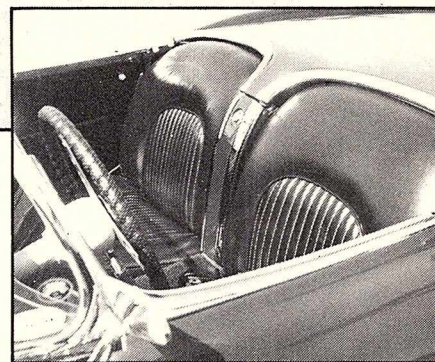
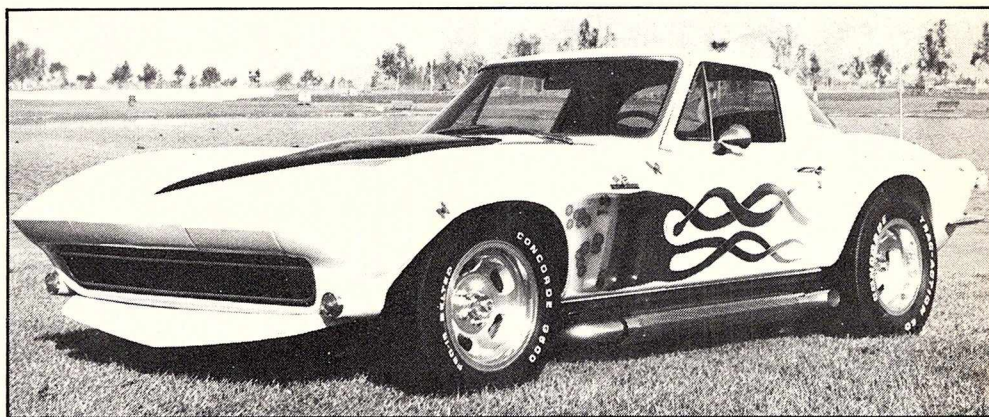
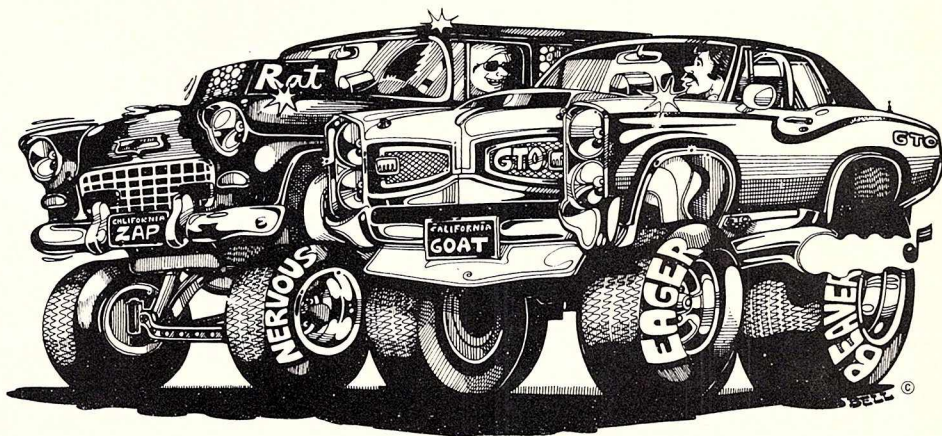
# ACROSS 49th STREET

Pat, Bob, and myself were out at the Los Angeles Fairgrounds just the other day when the Winter-nationals time trials were happening. Lots of things were happening from the only rear-engined funnycar "Hind Sight" going all the way over backwards, rails doing their super ground-shaking runs and even a full field of wheel standing modified street cars doing their thing. What has all of this got to do with *Across 49th Street*? Well, out of the whole mess and roar of the drags, I noted a special type of drag car that many of us have evidently overlooked. I'm not talking about the altered, or early coupes or even the mass field of fifty-five's. I'm talking about a car that has never known the meaning of the word "rust." Got it yet?

How about the Chevy plastic cars? The reason I happened to mention the drags in the beginning of this article is because one super neat Corvette out of the early sixties stuffed itself deep into the guard rail near the top end of the track. Since the car was in the modified class and had to be nearing the hundred mark when it 180'ed into the fence, it was damaged quite severely, but luckily, neither the driver or the car were totaled!

With the crash still fresh in my mind, I happened to start thinking about them as Street Rod material. After all, when you see a thing of pure beauty bashed, it really hurts.

But, what about the Vettes as rod material? Some guys will disagree, but a Chevy plastic car has got to be one of the real premium original hot rods. The one I like best is of the '62 variety. They have a locking trunk and a design which I feel was slightly ahead of the time. They are really trick machines from the hardtop-convertible tops to the ball ended door knobs. Take a look at a car which in my opinion is a genuine perfect car to be restored. The neat thing about the early Vettes is they were built to stay around a few years. Just take a look at some of the neat things about the early ones. A thick fiberglass body which really had some workmanship put into it. The locking trunk space is really neat as well as the space behind the bucket seats. Well designed and covered seats positioned low to aid the lowered center of gravity with just a little sacrifice in the comfort department. A powerful small block and trick radiator are neat as well as the hood that opens



backwards. Now, since all of that stuff was happening on a stocker, just think what can be done to an updated Corvette.

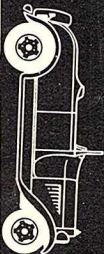
The enthusiasm goes just a bit farther than that too. A swap meet was held recently at Movie World, and sure enough, all kinds of super neat 'Vettes made an impressive showing. From the early fifties to the seventies, they were very well represented. It is really neat to see that the Corvette is by no means extinct.

So, there you have it. A really neat

factory type Street Rod, and like I said earlier, one that was built to stay around for a while. If you haven't had any luck in finding some suitable late model sheet metal car, why not take a closer look at one of the early Chevrolet plastic toys!



# STREET RODDER back issues



1973  
June  
December

1974  
January  
February  
April  
July  
September  
November  
December

1975  
January  
February  
March  
April

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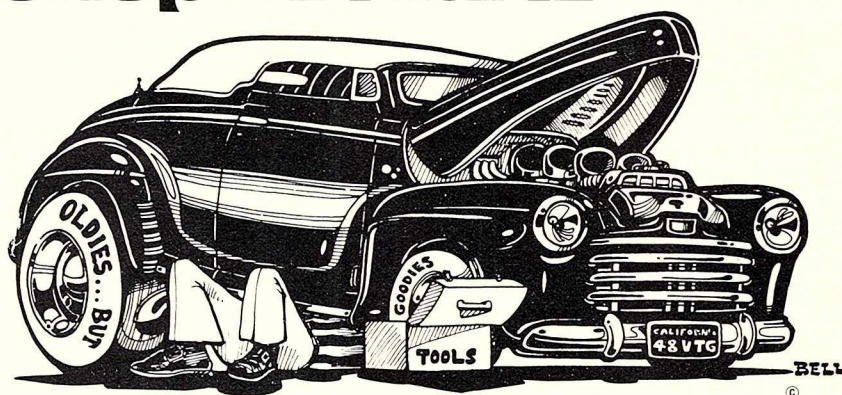
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## by Frank Oddo shop MANUAL



### FLATHEAD PROBLEMS

**Q** I have a '51 Ford flathead, but that's not my problem. I have searched high and low but can't come up with any racing products for my flathead. Could you help?

Dave Ludwick  
Parker, Ariz.

**A** We're really surprised you couldn't turn up any used flathead racing parts. Most any speed shop that carries used parts (or pawn shops, even) usually has tons of them. You must be very careful when buying any used aluminum parts, however — especially heads. They may be warped, or they may have been milled a few too many times in the past. And the most likely problem with these old parts is stripped threads in bolt or spark plug holes (of course, these could be corrected with heli-coils). If you want to buy some good, new flathead speed parts — like finned aluminum high-comp heads, various intake manifolds, brackets, linkages, etc. — send for the latest Offenhauser catalog (5232 Alhambra Ave., Los Angeles, CA 90039). They are currently manufacturing their full line of parts for '32 through '53 flatheads, and after you decide what you want, you can order it through your local speed shop, or other Offy dealer. We also checked with Edelbrock, and they said that they still have some flathead parts in stock (mostly for '49-'53 engines), but they are just about out. They anticipate another new run sometime in the future, but didn't say when.

### 1929 RADIATOR

**Q** Under the hood of my 1929 Tudor sits a stock 1972 V-6 Capri of the 2600cc variety. No firewall modifications and adequate fan to radiator space has left me with the

thought that the stock 1929 radiator might be able to handle the V-6's cooling needs. No problem will be encountered with the water necks as both upper and lower necks are correctly located. After reading the January issue, the only real trouble seems to be in the operating pressure. True? Anyway, should I or shouldn't I?

August Karlstedt  
Burbank, Ill.

**A** You shouldn't. Size-wise, a '29 Ford radiator would be more than ample to cool the V-6. However, the stock core will not carry the pressure. Your best bet would be to have a new core with a pressurized system (12-15 lbs.) built to the original dimensions. Your swap sounds good.

### HEATER UNITS

**Q** I am building a '52 Chevy with a tilt front end. Since I live in the Mid-west, I would like to install a heater that won't interfere with the fender unit. Can you help?

Albert Hall  
Ridgeville, Ind.

**A** Sears, and other mail order houses, made add-on heater units for years. They were a self-contained unit (a little smaller than a breadbox) which fit under the dash, against the inside of the firewall. Hook-up involves two water hoses and one electrical switch. I found one of these heaters in a junkyard to use in my truck (check any used heater to make sure it doesn't leak); you should also check the mail-order catalogues to see what they currently offer. I would also suggest that you check out a number of pickups (especially mini-trucks) while at the junkyard. Many used small, inner firewall-mounted heaters which could be easily adapted to an early car.



## FORD IN A FORTY

**Q** In December's *Street Rodder* one picture shows a 1940 Ford with what appears to be a 289" Ford motor. If this is so, could you forward some of the most important steps in achieving this swap. I would really appreciate any help I may receive. Thank you.

Jim Cherry  
Westchester, PA.

**A** This is a tough swap, but if you aren't unwilling to cut the firewall, here goes. The stock oil pan won't clear the front crossmember, the left head hits the firewall and the top of the bell housing won't clear the bottom lip of the firewall. Are you sure you don't want a Chevy motor after all? Okay, remove just enough firewall to slip the engine all the way back. You'll find the stock transmission cradle has to be removed and the "X" member trimmed to clear the trans tailshaft. Cut rear trans mounts (for a C-4) from 1.5" x 1.5" angle iron and arc weld them to the "X" member. With the stock trans biscuits used as cushions, the engine can now sit in the frame level enough to locate the front mounts. We suggest Hurst motor mounts which bolt from the heads to the

crossmember with regular '40 biscuits between frame and mount and a pair of 1-9/16" alternator spacers between mount and right head.

Use the Bronco oil pan conversion which consists of the oil pump pickup and screen (C6TZ 6622-D), a special main bearing cap bolt used to support the screen (C6TZ 6345-C), the new pan (C6TZ 6675-D), dipstick (C6TZ 6750-D) and dipstick housing (C6TZ 6754-E).

The exhaust manifold on the right bank is OK as is with adequate clearance and spark plug accessibility. On the left bank, however, the steering gear is in direct opposition to the stock manifold and unless headers are anticipated, use manifold (DOA2 9431-C). The only problem is that the openings for the plugs are too tight for a socket, but a little grinding with a rotary file gets you home free.

To mount the alternator, the existing holes in the right head (where the motor mount bolts) can be drilled and retapped to take 7/16" case hardened cap screws. Use a curved upper bracket for adjustment.

Most of the remaining problems are not peculiar to the small block Ford installation.

## AFTER ONLY 41 YEARS?

**Q** The 195" engine in my 1934 Chevy Standard coupe has given up. I have purchased a rebuilt 1942-1951 Chevy 216". Can you tell me what modifications are required to install?

Also, the stock radiator is in good shape, and I would like to retain it. (After a trip to the local radiator shop for a cleaning, of course.) Will this radiator be compatible with the 216"?

Mike Sekula  
Niagara Falls, N.Y.

**A** In general, Chevy passenger car engines from 1937 through 1951 are the same and indeed the back of the block is the same from 1937 through 1962. But as far as we know, the 1936 and earlier engines were significantly different and swapping a later engine to these frames would entail much the same improvisation as any swap, i.e. new motor mounts, trans mounts, exhaust system, etc. In your favor, however, is the fact that six cylinder engine compartments are certainly spacious enough to give you working room.

There shouldn't be any problems with the stock radiator.



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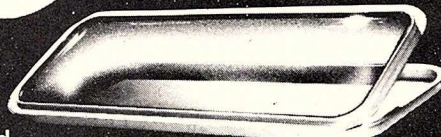
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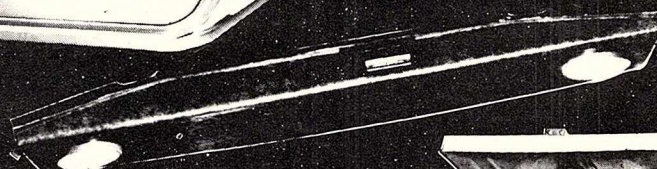
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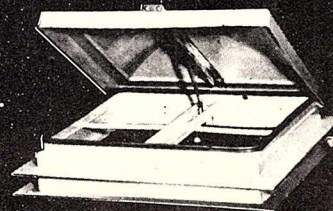
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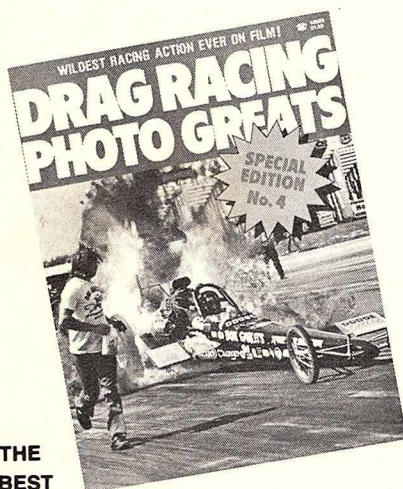
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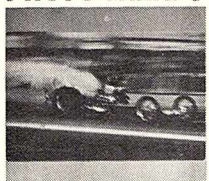
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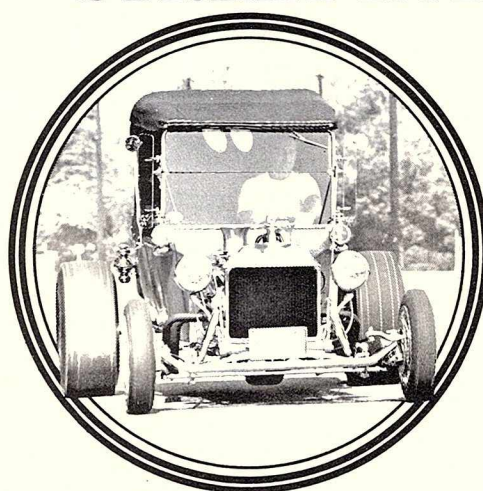
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# HAPPENINGS HAPPENINGS HAPPENINGS HAPPENINGS HAPPENINGS HAPPENINGS HAPPENINGS HAPPENINGS

**1975 STREET ROD NATIONALS WEST; March 28-30.** Del Mar by the Sea Fairgrounds, Del Mar, CA (near San Diego).

**1975 STREET ROD NATIONALS SOUTH; May 9-11.** Dixie Classic Fairgrounds, Winston-Salem, North Carolina. Hosted by North Atlanta SRA. Contact: Arvil Shepherd, 2648 Waughtown St., Winston-Salem, NC 27107.

**1975 STREET ROD NATIONALS EAST; June 6-8.** Maryland State Fairgrounds, Timonium, (Baltimore) MD. Contact: Free State Street Rods, 5625 Furnace Ave., Elkridge, MD 21227.

**1975 STREET MACHINE/VAN NATIONALS; June 26-29.** Iowa State Fairgrounds, Des Moines, Iowa.

**1975 STREET ROD NATIONALS; July 31-Aug. 3.** Mid-State Fairgrounds, Memphis, Tenn.

**For info or entry to NSRA events: NSRA, 2407 W. Olive #205, Burbank, CA 91505.**

**RIVERSIDE, CA — April 3, 4, 5.** 2nd Annual Lots of Fun Run. West Riverside Street Rod Assoc. Contact: Ross Cutshaw, 7651 Frazer Dr., Riverside, CA 92509. (714) 685-1312.

**PHOENIX, AZ — April 6.** 5th Annual Jeff Smith Picnic. Pre '49 cars only. Contact Jeff Smith, 1707 W. North Ln., Phoenix, AZ 85021.

**SPRINGFIELD, OH — April 4-6;** 1975 5th Annual World of Wheels Car Show and Swap Meet, Clark

County Fairgrounds. Contact: Vintage Cars of Springfield, P.O. Box 806, Springfield, OH 45501.

**GEORGETOWN, TX — April 5-6;** Cen-Tex Rod Run, sponsored by The Lone Star Street Rod Assoc. Contact: Billy Freeman, Rt. 4, Georgetown, TX.



**SANTA ROSA, CA — April 5-7;** 16th Annual Santa Rosa Custom Car and Speed Show, Sonoma County Fairgrounds. Contact: Ed Green, Entry Sect., P.O. Box 2415, Napa, CA 94558.

**CANTON, OH — April 18-20;** 2nd Annual Rod and Custom Car Show, Canton Memorial Auditorium. Contact: Dale Kelly, 510 Homes Place N.W., Canton, OH 44703.

**ANDALUSIA, AL — April 19-20;** Montezuma Classic's Fifth Annual Rod Run, for pre-49 cars only. Contact: Montezuma Classics, P.O. Box 845, Andalusia, AL 36420.

**MASSENA, NY — April 19-20;** 1st Annual Autorama, Massena Arena. Contact: National Autorama's, Inc., P.O. Box 70, Cicero, NY 13039.



**ODESSA, TX — April 19-30;** 2nd Annual West Texas Street Rod Assoc. Rod Show and Swap Meet, Ector County Coliseum. Contact: Jack May, 1311 E. 43rd St., Odessa, TX 79762.



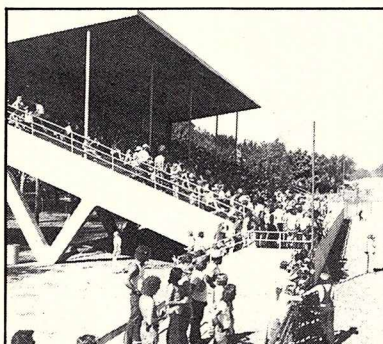
**ROSWELL, NM — April 19-20;** Automobile and Swap Meet, Cross Roads of Southwest. Contact: Gene Price, Dunlap Rt., Box 1026, Roswell, NM 88201.

**POCA, WV — April 26-27;** Golden Oldies Second Annual Street Rod Meet. Contact: Bill Fortune, 204 Dupont Ave., Nitro, WV.

**IRWINDALE, CA — April 27.** Antique Nationals. Drag racing for cars with pre-49 engines; Irwindale (213) 337-9421, 337-4827, (714) 545-2860, (805) 946-2484. After 7:00 P.M.

**CHESHIRE, CT — May 3.** Connecticut Street Rod Association's 6th Annual Swapmeet, Street Rod and Antique display. Superior Spring and Manufacturing Company Inc., 125 West Service Road. Contact: R. J. Welch, 1060 Notch Road, Cheshire, CT 06410.

**REGINA, SASKATCHEWAN — May 3.** 9th Annual Majestics Rod and Custom Car Show. Contact: Majestics, P.O. Box 881, Regina, Sask., Canada S4P 3B1.



**BIRMINGHAM, ALABAMA — May 3, 4.** 3rd Annual Southeastern Street Rods on Review hosted by Birmingham Street Rod Associa-

tion. For more info, contact Rip Allen, Route 1, Box 393, Sumiton, Alabama 35148.

**ELKHART, IND — May 4.** St. Joe Valley Corvette Association Swap Meet. Tom Naquin Chevrolet, 1000 West Beardsley, Elkhart, Ind. Contact: Dan Zeiger, 207 State St., Mishawaka, Ind. Deadline—April 19.

**PALOS VERDES, CA — May 4.** 1st Annual Golden Era Automobiles Wallrus Roast Rod Run. Contact: Rich Hairfield, (213) 644-1556.

**CALGARY, ALBERTA — May 8-11.** 9th Annual World of Wheels Auto, Boat, Speed Show. Big Four Building. Contact: P.O. Box 1518, Canoga Park, CA 91304.

**BOWLING GREEN, KY — May 17.** The 5th Annual Rod Run. Contact: Glen D. Steingerger, Route 1, Parksville, KY. (606) 854-6456.

**MONTGOMERY, AL — May 31, June 1.** 2nd Annual Capitol City Rod Run. Contact: Gerald Cope, 3923 Malabar Road, Montgomery, AL 36111. (205) 288-3939.



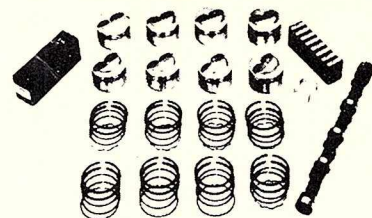
**SAN LUIS OBISPO, CA — May 17.** 2nd Annual Autorama, sponsored by San Luis Roadsters. Contact: Sherm Porter, P.O. Box 486, San Luis Obispo, CA 93406. (805) 543-8289.

**LODI, CA — May 18.** Fourth Annual All-Ford Picnic. Contact: Gary E. Cox, Chairman, c/o Lincoln Automotive Center, 711 Lincoln Center, Stockton, CA 95207. (209) 478-6234.

**COLUMBUS, NB — May 23-25.** 1st Midwest Street Rod Assn. Columbus Run. Contact: Jerry Harris, RFD #1, Shelby, NB 68662. (402) 527-4163.

**WATERDOWN, ONTARIO, CANADA — May 24, 25.** Waterdown's 6th Annual Swap Meet and Street Rod Gathering. Memorial Park, Waterdown. Contact: Box 451, Waterdown, Ontario, Canada, LOR 2H0.

**ALBUQUERQUE, NM — May 25.** Swap Meet. Contact: VMCCA, P.O. Box 25502, Albuquerque, NM 87125.



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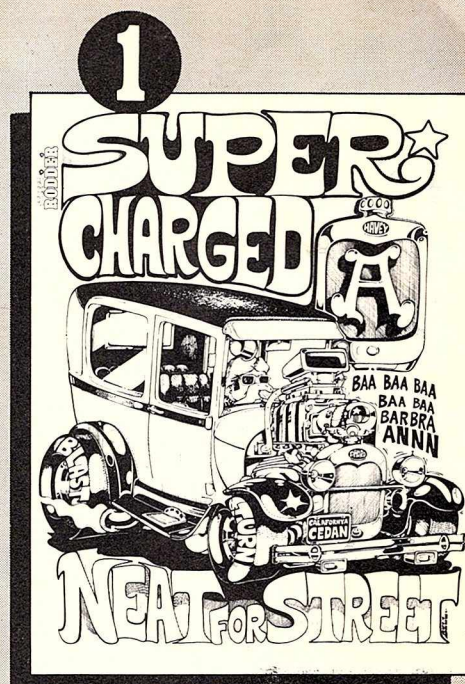
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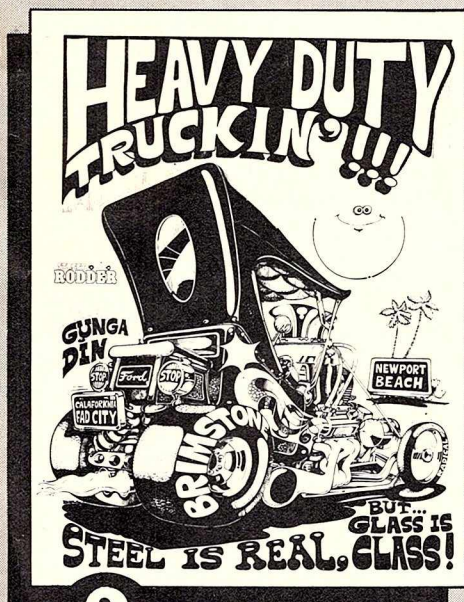


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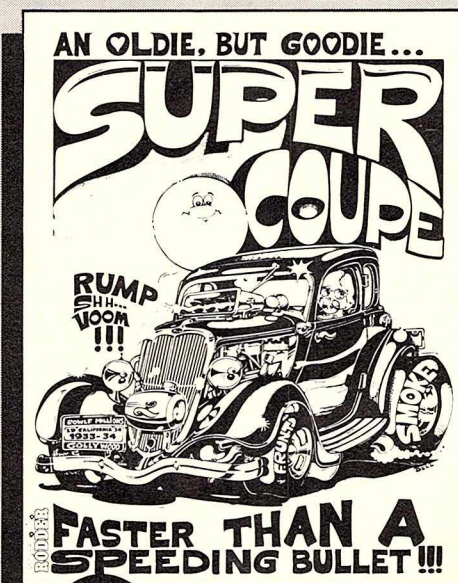
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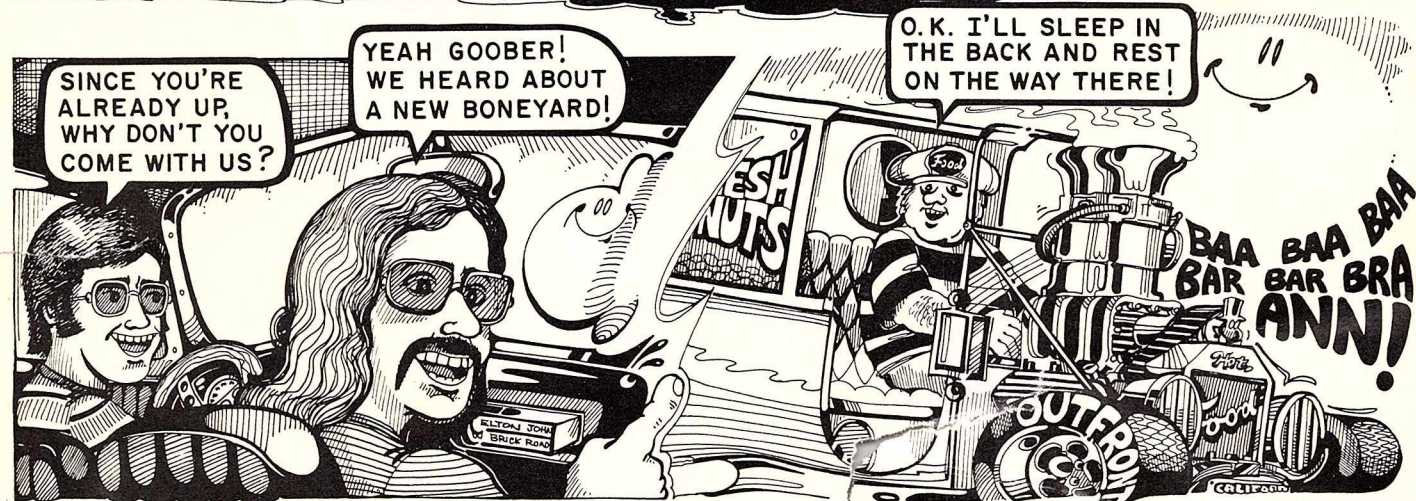
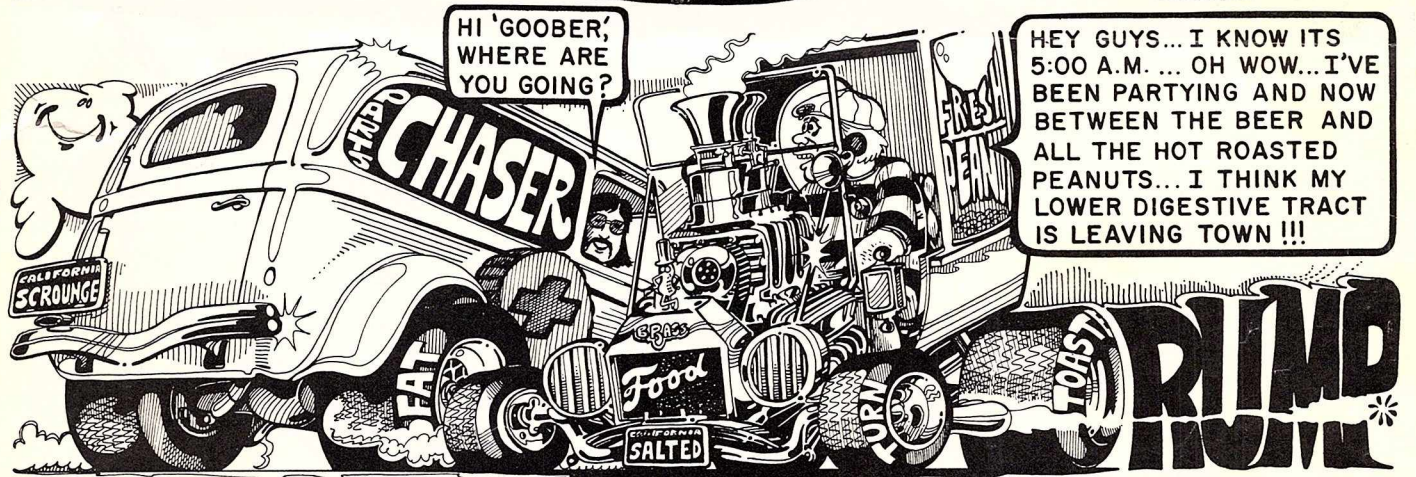
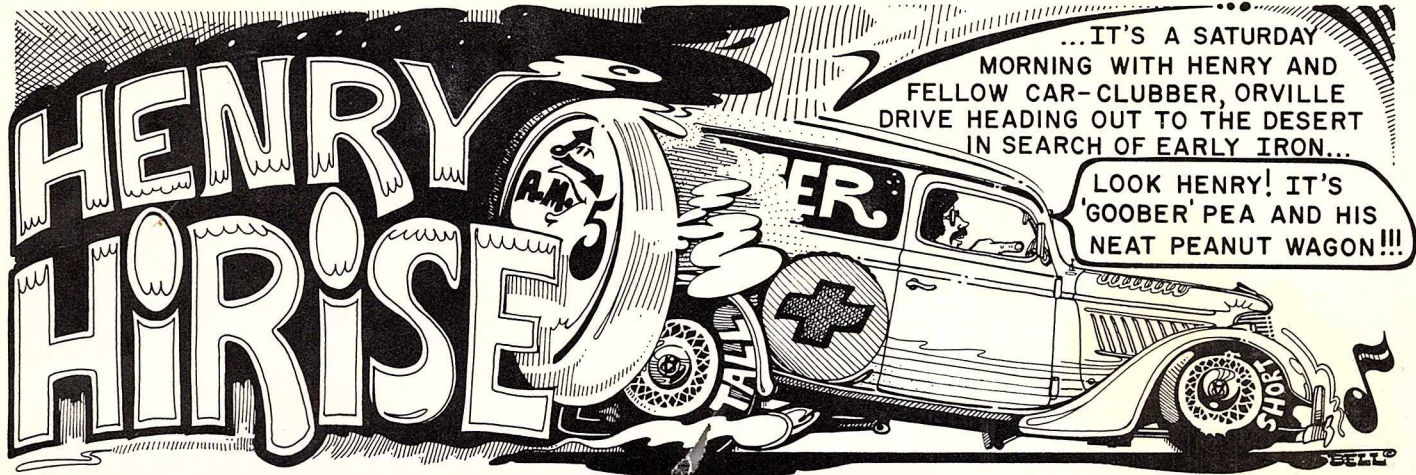
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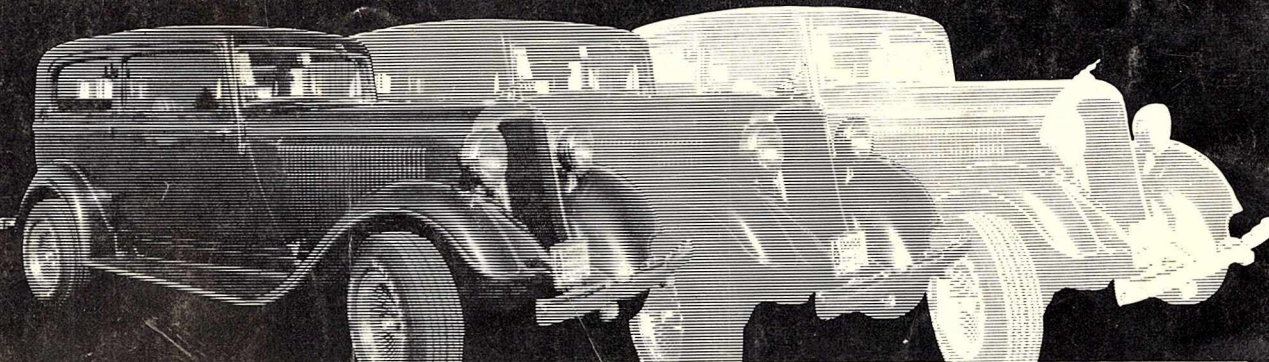
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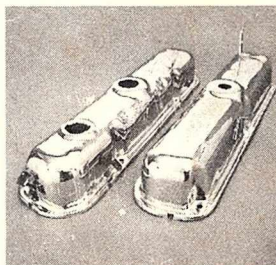
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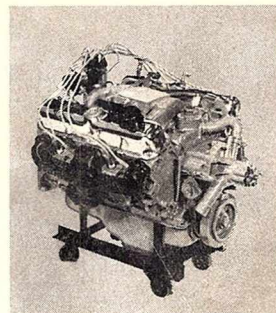
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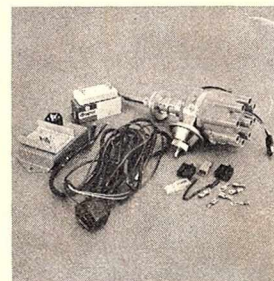
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